

508-12  
T  
223  
H2X  
NMAH

3/5

ANNUAL REPORT

OF THE

4.P.  
COMMISSIONER OF PATENTS

FOR

THE YEAR 1870.

VOLUME I.

283735

WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1872.

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

1800

## LETTER.

DEPARTMENT OF THE INTERIOR, PATENT OFFICE,  
*Washington, D. C., January 31, 1871.*

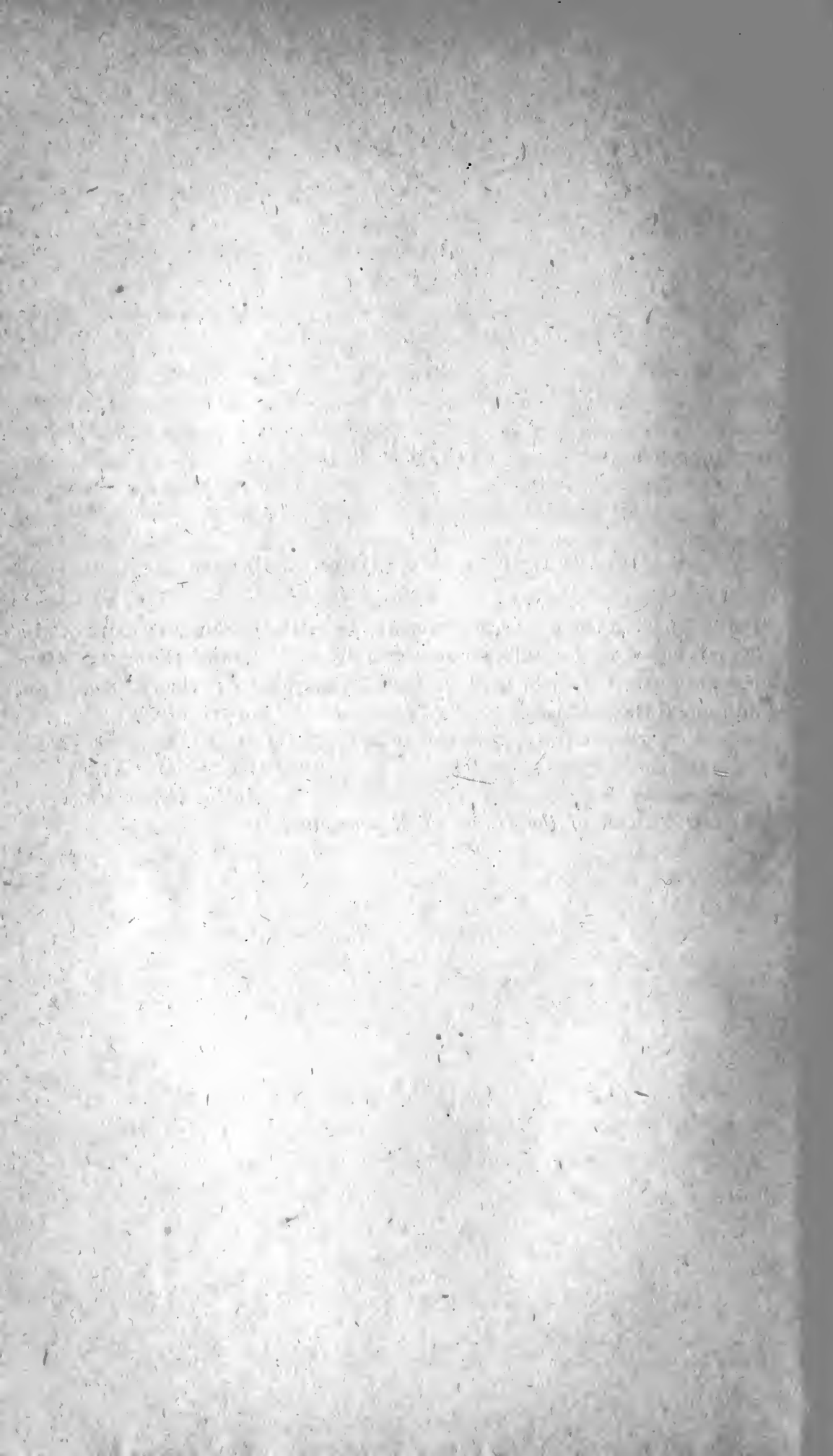
SIR: I have the honor to transmit herewith the annual report of the Commissioner of Patents, as required by section 9 of the act of Congress, approved July 8, 1870, entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights."

Very respectfully, your obedient servant,

SAM'L A. DUNCAN,  
*Acting Commissioner.*

The SPEAKER of the *House of Representatives.*





# REPORT.

UNITED STATES PATENT OFFICE,  
January 31, 1871.

*To the Senate and House of Representatives of the United States of America in Congress assembled:*

By the 9th section of the act of Congress approved July 8, 1870, entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights," the Commissioner of Patents is required to lay before Congress, annually, in the month of January, a report "giving a detailed statement of all moneys received for patents, for copies of records or drawings, or from any other source whatever; a detailed statement of all expenditures for contingent and miscellaneous expenses; a list of all patents which were granted during the preceding year, designating under proper heads the subjects of such patents; an alphabetical list of the patentees, with their places of residence; a list of all patents which have been extended during the year; and such other information of the condition of the Patent Office as may be useful to Congress or the public."

In compliance with this requirement of the statute, I have the honor to submit the following report:

The receipts and expenditures of the office for the year ending December 31, 1870, and the condition of the balance in the Treasury on account of the patent fund, as well as the character and extent of the business done by the office during the year, are shown in the following statements:

## No. 1.—Statement of moneys received.

Amount received on applications for patents, reissues, extensions, caveats, disclaimers, appeals and trade-marks.....	\$603,775 00
Amount received for copies of specifications, drawings, and other papers.....	46,559 70
Amount received for recording assignments.....	19,122 06
Total .....	<u>669,456 76</u>

## No. 2.—Statement of moneys expended.

Amount paid for salaries.....	\$404,143 53
Amount paid for photographing.....	22,457 18
Amount paid for contingent and miscellaneous expenses:	
Advertising.....	\$2,923 60
Stationery.....	9,953 57
Photographing.....	22,406 56
Lithographing, printing drawings, tracings, patent heads, &c.....	6,811 81
Painting, glazing, and varnishing.....	6,934 30
File-boxes.....	1,698 45
Furniture, carpeting, &c.....	10,987 61
Repairing furniture, carpenter's work, &c.....	5,005 57
Fitting up new room over south portico.....	4,995 04
Fitting up cases in model-room.....	11,905 20
Fitting up cases in rooms.....	4,350 96

Iron stairs leading to portico-room.....	\$1, 535 00
Iron railing, &c., in model-room.....	740 88
Reducing drawings for lithographing.....	1, 710 50
Making drawings.....	5, 192 04
Plumbing and gas-fitting.....	900 37
English patents.....	1, 910 52
Paper-hanging.....	1, 972 17
Work on report.....	3, 266 85
Preparing index of assignments.....	5, 514 00
Refunding money paid by mistake.....	920 00
Miscellaneous items, books for library, subscriptions to journals, freight, ice, temporary laborers and copyists, hardware, keeping horse, brooms, brushes, buckets, mops, soap, spittoons, stoves and putting up the same, clocks and keeping them in repair, washing towels, fees of judges in appeal cases, withdrawals, &c.....	18, 911 48
	<u>\$130, 546 48</u>

Total ..... 557, 147 19

No. 3.—*Statement of the balance in the Treasury of the United States on account of the patent fund.*

Amount to the credit of the patent fund, January 1, 1870.....	\$531, 045 64
Amount of receipts during the year 1870.....	669, 456 76

Total ..... 1, 200, 502 40

From which deduct expenditures for the year 1870..... 557, 147 19

Balance on the 1st of January, 1871..... 643, 355 21

No. 4.—*Statement of the business of the office for the year 1870.*

Number of applications for patents during the year 1870.....	19, 171
Number of patents issued, including reissues and designs.....	13, 321
Number of applications for extensions of patents.....	200
Number of patents extended.....	111
Number of caveats filed during the year.....	3, 273
Number of patents expired during the year.....	2, 543
Number of patents allowed, but not issued for want of final fee.....	1, 016
Number of applications for registering of trade-marks.....	188
Number of trade-marks registered.....	121

Of the patents granted there were to—

Citizens of the United States.....	12, 677
Subjects of Great Britain.....	349
Subjects of France.....	89
Subjects of other foreign governments.....	206
	<u>13, 321</u>

The patents issued to citizens of the United States were distributed among the citizens of the several States, Territories, &c., as follows

Alabama.....	36	Michigan.....	401
Arkansas.....	11	Minnesota.....	70
California.....	216	Mississippi.....	50
Colorado Territory.....	18	Missouri.....	210
Connecticut.....	739	Montana.....	1
Delaware.....	39	Nebraska.....	16
District of Columbia.....	174	Nevada.....	9
Florida.....	5	New Hampshire.....	111
Georgia.....	81	New Jersey.....	474
Illinois.....	835	New Mexico Territory.....	2
Indiana.....	452	New York.....	2, 962
Iowa.....	208	North Carolina.....	54
Kansas.....	46	Ohio.....	982
Kentucky.....	143	Oregon.....	22
Louisiana.....	111	Pennsylvania.....	1, 481
Maine.....	139	Rhode Island.....	197
Maryland.....	206	South Carolina.....	35
Massachusetts.....	1, 448	Tennessee.....	109

Texas .....	48	Citizens of the United States re-	
Utah Territory .....	1	siding in foreign countries.....	17
Vermont .....	123	Persons in United States Army...	7
Virginia .....	110	Persons in United States Navy...	1
Washington Territory .....	1		
West Virginia .....	47	Total.....	12, 677
Wyoming Territory .....	1		
Wisconsin .....	228		

No. 5.—Comparative statement of the business of the Office from 1837 to 1870, inclusive.

Year.	Applica- tions filed.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837 .....			435	\$29, 289 08	\$33, 506 98
1838 .....			520	42, 123 54	37, 402 10
1839 .....			425	37, 260 00	34, 543 51
1840 .....	765	228	473	38, 056 51	39, 020 67
1841 .....	847	312	495	40, 413 01	52, 666 87
1842 .....	761	391	517	36, 505 68	31, 241 48
1843 .....	819	315	531	35, 315 81	30, 776 96
1844 .....	1, 045	380	502	42, 509 26	36, 244 73
1845 .....	1, 246	452	502	51, 076 14	39, 395 65
1846 .....	1, 272	448	619	50, 264 16	46, 158 71
1847 .....	1, 531	553	572	63, 111 19	41, 878 35
1848 .....	1, 628	607	660	67, 576 69	58, 905 84
1849 .....	1, 955	595	1, 070	80, 752 78	77, 716 44
1850 .....	2, 193	602	995	86, 927 05	80, 100 95
1851 .....	2, 258	760	869	95, 738 61	86, 916 93
1852 .....	2, 639	996	1, 020	112, 656 34	95, 916 91
1853 .....	2, 673	901	958	121, 527 45	132, 869 83
1854 .....	3, 324	868	1, 902	163, 789 84	167, 146 32
1855 .....	4, 435	906	2, 024	216, 459 35	179, 540 33
1856 .....	4, 960	1, 024	2, 502	192, 588 02	199, 931 02
1857 .....	4, 771	1, 010	2, 910	196, 132 01	211, 582 09
1858 .....	5, 364	943	3, 710	203, 716 16	193, 193 74
1859 .....	6, 225	1, 097	4, 538	245, 942 15	210, 278 41
1860 .....	7, 653	1, 084	4, 819	256, 352 59	252, 820 80
1861 .....	4, 643	700	3, 340	137, 354 44	221, 491 91
1862 .....	5, 038	824	3, 521	215, 754 99	182, 810 39
1863 .....	6, 014	787	4, 170	195, 593 29	189, 414 14
1864 .....	6, 932	1, 063	5, 020	240, 919 98	229, 868 00
1865 .....	10, 664	1, 937	6, 616	348, 791 84	274, 199 34
1866 .....	15, 269	2, 723	9, 450	495, 665 38	361, 724 28
1867 .....	21, 276	3, 597	13, 015	646, 581 92	639, 263 32
1868 .....	24, 420	3, 705	13, 378	681, 565 86	628, 679 77
1869 .....	19, 271	3, 624	13, 986	693, 145 81	456, 430 78
1870 .....	19, 171	3, 273	13, 321	669, 456 76	557, 147 19

A subject-matter index of the patents issued during the year 1870, an alphabetical list of the patentees with their places of residence, and a list of the patents extended during the year, have been prepared and are submitted herewith as a part of this report.

Called upon to perform the duties of Commissioner of Patents temporarily only, until the gentleman already appointed to fill the vacancy occasioned by the resignation of the late Commissioner shall assume the office, it would manifestly be improper that I should embrace the present opportunity to recommend measures the advisability of which can in any respect be called in question. I shall refrain, therefore, from any general discussion of the affairs of the Patent Office, and confine myself to two or three matters which demand early attention and about which it would seem that there can be but little difference of opinion.

By the joint resolution providing for publishing the specifications and drawings of the Patent Office, approved January 11, 1871, it is provided that the publication of the abstracts of specifications and of

the engravings heretofore accompanying the annual report of the Commissioner of Patents shall be discontinued after the middle of the year eighteen hundred and sixty-nine, the mechanical illustrations for the first six months of that year having been already prepared; and that in lieu thereof the Commissioner is authorized to have printed for gratuitous distribution one hundred and fifty copies of the complete specifications and drawings of each patent thereafter issued, which copies, duly certified under the hand of the Commissioner and the seal of the Patent Office, are to be placed for free public inspection in the various State and territorial capitals and in the clerk's offices of the district courts of the various judicial districts throughout the United States; and this officer is further authorized and directed to have printed such additional numbers of copies of specifications and drawings, certified as before provided, as may be warranted by the actual demand for the same, to be sold at a price not exceeding the contract price for such drawings. It is also provided that the copies of drawings shall be made upon contract after due advertisement by the Superintendent of Public Printing, under the direction of the Joint Committee on Printing.

This discontinuance of the publication of the mechanical report is in conformity with the recommendation of the late Commissioner of Patents. I have always doubted somewhat the wisdom of such a step, knowing, as I do, the avidity with which inventors in all parts of the country seek for copies of the report; and believing, also, that the matter contained therein, though necessarily imperfect, is, nevertheless, full of suggestions, and peculiarly calculated to furnish food for the inventive mind.

The delay heretofore connected with the publication of that report could have been entirely obviated by promptness in making the necessary appropriations for the work, as by proper management the Office could easily have had all the matter ready for press within one month after the end of the year. If it was found that the report under the system of distribution heretofore adopted failed to reach the quarters where it would confer the most benefit, this evil could easily have been remedied by providing, among other things, that each patentee of a given year should receive as a gratuity one copy of the report for that year, and that the rest of the edition be sold at a price not exceeding the prime cost thereof. And as to the printed copies to be hereafter placed at central points, as provided by the joint resolution, it is feared that they will be of comparatively little service to the great mass of inventors who are scattered widely through the sparsely settled portions of the country, and who practically will have but little opportunity of consulting them. As evidence in the courts, as aids to patent solicitors and to professional experts, upon whom inventors largely rely, and as sources of information to all persons living near the places of deposit, they will of course prove valuable, as furnishing more exact

and reliable knowledge than can be gained from any other source. For this reason they would form a most valuable adjunct to the present report; and in view of the great benefits which the patent system has already conferred upon the nation—single inventions, like the sewing machine, the harvester, the telegraph, or vulcanized rubber, having more enriched the country than the whole system has cost from its inauguration to the present time—I believe that the expense of retaining the mechanical report in addition to the new publication would be fully justified. The annual income of the Patent Office, in excess of its expenditures, would more than pay the cost of the proposed additional work; and the balance of six hundred and forty thousand dollars in the Treasury to the credit of the patent fund warrants the most liberal policy in support of the workings of this bureau. The Government ought not to seek to raise revenue by levying taxes upon the inventive genius of the people; but all the money received from inventors should be expended in such a way as to secure the largest and most beneficent development of the patent system.

But, whatever question may be made as to the policy of retaining or dispensing with the mechanical report, if we inquire as to the mode in which the drawings should be reproduced in carrying out the provisions of the recent enactment, I am convinced from a careful consideration of the subject that the work should be done by the Patent Office itself and not by contract. The objections to dealing with contractors are manifold. Not the least among them is the fact that the office is required to part temporarily with the custody of its original records, a thing which, for obvious reasons, should never take place, and which at times becomes the source of great inconvenience in the transaction of business. With a proper outfit the work could undoubtedly be done in the office as artistically and more economically than by outside parties. Under this arrangement, too, the copies prepared for gratuitous distribution could be made to conform in size to those which are now being made for office use, and thus a saving of many thousands of dollars be effected annually. If under the contract system a smaller size be adopted, it would necessitate a recomposition of the entire letter-press at an annual expense of not less than sixty thousand dollars, against which there would appear as elements of saving, from the reduced cost of paper and binding, not more than thirty thousand dollars. I deem it of importance, as a matter of economy as well as convenience, that the same size be adopted for the public as for the Office.

I would respectfully suggest, therefore, that in any appropriation which may be made for carrying out the provisions of the joint resolution, it shall be provided that if, in the judgment of the Secretary of the Interior, the work can be performed more advantageously under the direction of the Commissioner of Patents than in the manner proposed by the resolution, it shall be so done. This, without deciding the ques-

tion of relative economy in advance, would give the head of the Department opportunity to investigate the whole subject thoroughly before the course to be adopted should finally be decided upon.

As regards the sale of single copies of the specification and its accompanying drawing, the price established by the joint resolution is unnecessarily and unreasonably low. "The contract price of the drawing" could hardly be expected to exceed three cents; yet the cost of the drawing and the corresponding specification, together with the handling and certifying of the same, could not be much less than ten cents. As certified copies are mainly needed for proceedings in courts and in settling questions of title, I would suggest that the price of the same be left as now fixed by the patent law, and that the price of uncertified printed copies be left to the determination of the Commissioner, ten cents being fixed as the minimum and fifty cents as the maximum. This would be such a reduction from the prices now charged as would doubtless create a largely increased demand, and give no occasion for complaint; at the same time it might reasonably be expected to add considerably to the revenues of the Office from this source.

By section 20 of the patent act approved July 8, 1870, the Commissioner of Patents is authorized to print, or cause to be printed, copies of the claims of current issues of patents, and copies of such laws, decisions, rules, regulations, and circulars as may be necessary for the information of the public. Under this provision of law the Office has, for some time past, been issuing a weekly list of patents, which contains the number, title and claim of each patent issued, together with the name and residence of the patentee. This publication costs the Government about five thousand dollars per annum. It is sold to subscribers at five dollars a year; and the amount realized from this source during the last year is thirty-three hundred and sixty-eight dollars. The amount paid for advertising applications for the extension of patents, during the same time, is twenty-nine hundred and twenty-three dollars.

I would respectfully recommend that the Commissioner of Patents be authorized to enlarge the scope of the periodical publication named, so as to make it an official gazette, in which all the advertisements pertaining to the business of the Office shall be inserted, in lieu of all other advertising as now required by law. At present, the law requires that the Commissioner shall publish a notice of every extension application in one newspaper in the city of Washington, and in such other papers published in the section most interested adversely to the extension of the patent, as he may deem proper. Under this law, the patronage of the Office is distributed among three of the Washington papers, and a second copy of the advertisement is usually sent to some paper in the vicinity of the residence of the patentee. This is at best an imperfect system of accomplishing the work intended, as there is no one paper in the entire country which contains all the advertisements of the Office,



and which therefore a person concerned, professionally or otherwise, in extension applications, can take, and feel assurance that the very case for which he is watching may not escape his eye. By the proposed change in this regard all uncertainty of this kind would disappear; the public, both inventors and attorneys, would be much better served, since in connection with the list of claims they would receive the official advertisements without further expense; and a considerable saving to the Government would be effected, both by the cessation of further payments for advertising and by the largely increased circulation which by this means would be secured for the publication already authorized by law.

By section 63 of the patent act it is provided that an application for the extension of a patent shall be filed "not more than six months nor less than ninety days before the expiration of the original term of the patent." Under this section applications are generally delayed until the last moment; and then it frequently happens, if the case is an important one, in which opposition is entered, and the taking of a large amount of testimony, to be obtained in remote and widely separated sections of the country, becomes necessary, that the application cannot be prepared for hearing until so late a day as to cause the careful consideration of it prior to the expiration of the patent seriously to interfere with the Commissioner's duties in relation to other matters. It frequently happens, too, that on the day of hearing a fatal defect in the presentation of the case is developed, which, if there were further time at the disposal of the party, might be remedied. For these reasons every such case, in my judgment, should be brought to a hearing at least four weeks before the date of the expiration of the patent. To this end the application must be filed in the Office at an earlier day than is now required by law. I would suggest that nine months be fixed as the maximum limit, and six as the minimum.

The business of the Patent Office for the past year is perhaps sufficiently exhibited by the tables already given, and does not call for any extended remark. I cannot, however, close this brief report without referring to the eminent service rendered by the late Commissioner, the Hon. Samuel S. Fisher, whose energy and ability in the discharge of his official duties have done so much to correct and systematize the practice of the Office. The periodical publication of the Commissioner's decisions, whereby the examiners, as well as attorneys, have received early information of the principles which controlled the head of the Office in deciding the cases brought to his personal attention, has proved a marked and most valuable feature of the late administration. Great care was also exercised in the filling of vacancies, the appointments being made with special reference to the merits of the persons receiving them, and in many instances after they had passed the ordeal of a severe competitive examination.

The manifest improvement thus effected in the *personnel* of the Office

reflects credit upon the officer under whose administration it was brought about. The impress which he has left behind him will be lasting, and his official connection with the patent system will long be remembered with satisfaction and pleasure.

Respectfully submitted.

SAM'L A. DUNCAN,  
*Acting Commissioner.*

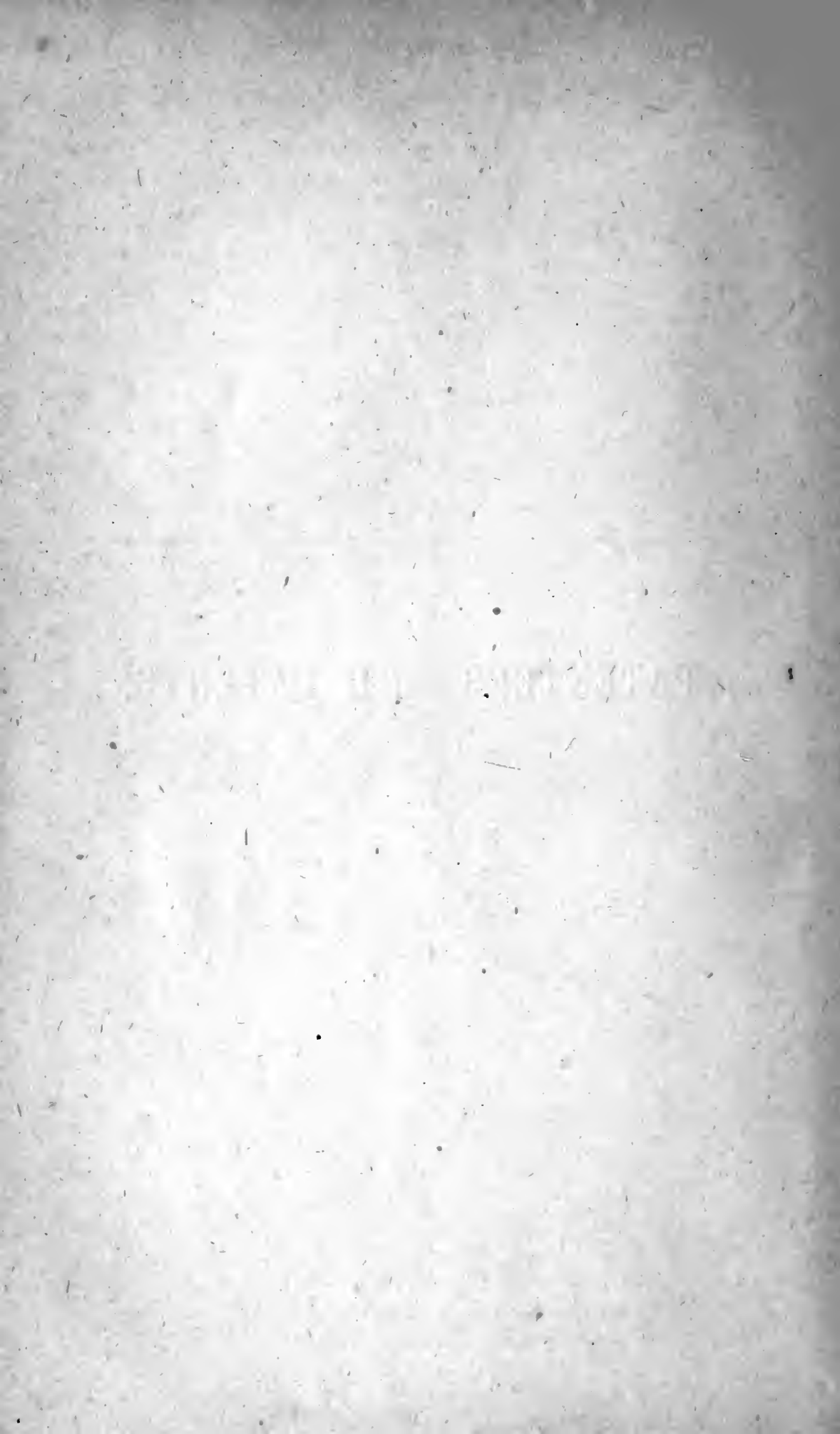
---

---

PATENTEES AND PATENTS.

---

---



# ALPHABETICAL LIST

OF

## PATENTEES FOR THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date.
100,581	Abbe, John R., Providence, R. I. Bolt machine. (Antedated March 1, 1870)....	Mar. 8, 1870
109,993	Abbott, David S., Ischua, N. Y. Carriage-spring.....	Dec. 13, 1870
104,812	Abbott, Dexter, D. W., assignor to self and Henry W. Peabody & Co., Boston, Mass. Emery soap for polishing and cleaning.....	June 23, 1870
103,117	Abbott, Job, assignor to Automatic Fire-alarm Company, Canton, Ohio. Alarm telegraph signal lodes.....	May 17, 1870
	Abbott, Job, and David Hammond, (3 cases.) (See Hammond & Abbott.)	
101,204	Abbott, John M., Hillsdale, Mich. Elevated railways.....	Mar. 29, 1870
105,404	Abbott, J. P., Cleveland, Ohio. Eaves-trough hanger.....	July 19, 1870
104,920	Abbott, Levi, assignor to Lewiston Machine Company, Lewiston, Me. Warp-ing-machine.....	July 5, 1870
	Abbott, L. C., and M. L. Holt. (See Holt & Abbott.)	
108,082	Abbott, Paschal J. and Job, Dexter, Me. Cover for culinary boilers.....	Oct. 11, 1870
	Abbott, Stephen J. (See Downes & Douk, assignors.)	
99,277	Abbott, Thomas R., Lowell, Mass. Roofing composition.....	Feb. 1, 1870
103,536	Same.....Composition felting for covering roofs, ship's bottoms, &c.....	May 31, 1870
100,487	Abel, Anthony, assignor to self and Adam Schwab, New York, N. Y. Barber's chair.....	Mar. 8, 1870
105,537	Able, William H., Lowell, Mass. Knitting-machine.....	July 19, 1870
105,538	Able, William H., assignor to self, Robert H. Brown, and John E. Crane, Low-ell, Mass. Knitting-machine.....	July 19, 1870
105,539	Same.....same.....	July 19, 1870
106,531	Able, William H., assignor to self and John E. Crane, Bennington, Vt. Knit-ting-machine.....	Aug. 23, 1870
109,569	Abell, Joshua L., Cummington, Mass. Cutting apparatus for harvesters.....	Nov. 29, 1870
101,804	Abell, Olif, Wolcott, Vt. Wooden box.....	April 12, 1870
101,805	Same.....same.....	April 12, 1870
	Abendroth, W. P., et al. (See Muller, T. H., assignor).....(Reissue.)	
102,075	Abercrombie, Edwin L., Florence, Mass. Tool-handle.....	April 19, 1870
	Aborn, James, and Joseph J. Comstock. (See Comstock & Aborn.)	
102,200	Abraham Lewis, New York, N. Y. Revenue and postal stamps.....	April 26, 1870
98,537	Absterdam, John, New York, N. Y. Method of manufacturing a fagot for steel-headed rails.....	Jan. 4, 1870
99,805	Same.....Process of welding cast or Bessemer steel.....	Feb. 15, 1870
109,166	Achenbach, John R., assignor to self and Thomas and P. O. Terhune, Saddle River, N. J. Chicken-coop.....	Nov. 15, 1870
103,820	Achenbach, John R., Saddle River, N. J. Rein-holder.....	June 7, 1870
110,325	Achew, Henry, Cincinnati, Ohio. Socket for broom-handles.....	Dec. 20, 1870
106,981	Ackerman, Michael, Steamboat Rock, Iowa. Corn-planter.....	Sept. 6, 1870
102,076	Adair, John J., assignor to William J. Huey, Portland, Ind. Buckle.....	April 19, 1870
103,118	Adair, John J., assignor to William J. Huey and Joshua Bishop, Portland, Ind. Whiffletree.....	May 17, 1870
109,098	Adams, Abraham S., Waynesboro, Pa. Tree protector.....	Nov. 8, 1870
105,877	Adams, Alfred, Chagrin Falls, Ohio. Paper-bag.....	Aug. 2, 1870
105,619	Adams, Alfred, and Joseph F. Jewett, Cincinnati, Ohio. Paper fruit-basket.....	July 26, 1870
104,531	Adams, Amos, Sturgis, Mich. Gas-heater.....	June 21, 1870
101,803	Adams, Andy M., Washington, D. C. Padlock.....	April 12, 1870
106,447	Same.....Wood pavement.....	Aug. 16, 1870
108,951	Same.....Pad and trunk lock.....	Nov. 8, 1870
	Adams, Augustus, and William R. Low. (See Low & Adams.)	
106,302	Adams, Benjamin F., Boston, Mass. Lamp-burner.....	Aug. 16, 1870
106,303	Same.....same.....	Aug. 16, 1870
100,095	Adams, Charles, Philadelphia, Pa. Deoxidizing and carbonizing iron-ore.....	Feb. 22, 1870
104,398	Adams, Charles M., Canton, Miss. Folding dental chair.....	June 21, 1870
100,582	Adams, Durward, Boston, Mass. Umbrella.....	Mar. 8, 1870
	Adams, E., jr., et al. (See Howard, James Spooner, assignor.)	
	Same.....same.....	
	Adams, George. (See Johnston, Thomas, assignor.)	
103,537	Adams, Henry A., Sandwich, Ill. Cultivator.....	May 31, 1870
	Adams, Henry A., and Andrew Shogren. (See Shogren & Adams.)	
107,209	Adams, Henry B., New York, N. Y. Taper-holder. (Antedated Sept. 3, 1870)...	Sept. 13, 1870
110,414	Adams, Henry W., Philadelphia, Pa. Apparatus for supplying air.....	Dec. 27, 1870
	Adams, Henry W. (See Hall, William Samuel, assignor.)	
100,961	Adams, Isaac, jr., Boston, Mass. Electro deposition of metals.....	Mar. 22, 1870
102,748	Same.....Electro deposition of nickel.....	May 10, 1870
101,967	Adams, Isaac J. W., Salisbury, Md. Apparatus for measuring boards.....	April 19, 1870
98,538	Adams, James, Newark, Del. Carriage curtain fastening.....	Jan. 4, 1870
	Adams, James, and Thomas B. McConaughy, (2 cases.) (See McConaughy & Adams.)	
102,465	Adams, James N., Chillicothe, Mo. Tin-gutter machine.....	May 3, 1870
102,466	Same.....Tin-tubing machine.....	May 3, 1870
	Adams, John, et al. (See Beatty, James H., assignor.)	
4,257	Adams, John, Birmingham, Pa. Trade-mark.....(Design)...	July 26, 1870
	Adams, John H., and John W. Kenny. (See Kenny & Adams.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,304	Adams, John Peabody, Ipswich, Mass. Equalizing the main-spring of time-pieces	Aug. 16, 1870
104,698	Adams, John Quincy, and Samuel R. Goodsell, Brooklyn, N. Y. Knife scourer	April 12, 1870
100,834	Adams, John R., San Francisco, Cal. Track-laying machine	Mar. 15, 1870
106,760	Adams, John S., Elgin, Ill. Truss-bridge	Aug. 30, 1870
104,399	Adams, Joseph, Manteno, Ill. Cultivator. (Antedated June 11, 1870)	June 21, 1870
99,806	Adams, Joseph A., Brooklyn, N. Y. Mode of covering molds and other articles with a metallic surface	Feb. 15, 1870
102,077	Same.....Electrotyping	April 19, 1870
100,962	Adams, Joseph F., Buffalo, N. Y. Photographic show-case	Mar. 22, 1870
106,104	Adams, Joseph P., and John P. Corbin, said Adams assignor to said Corbin, Broome County, N. Y. Butter-worker	Aug. 9, 1870
99,047	Adams, Milton E., assignor to E. B. Welch, Boston, Mass. Printing-telegraph	Jan. 25, 1870
100,963	Adams, Moses, Chilmark, Mass. Buckle	Mar. 22, 1870
102,467	Adams, M. Pascal, Pittsburg, Pa. Stave-dressing machine	May 3, 1870
109,367	Adams, Samuel E., Springfield, Ohio. Electro-nasal douche	Nov. 22, 1870
105,878	Adams, Samuel W., assignor to T. B. Doolittle, Providence, R. I. Twine and thread cutter	Aug. 2, 1870
106,532	Adams, Sanford, Boston, Mass. Coal-sifter	Aug. 23, 1870
	Adams, Thomas, and Charles L. Knecht. (See Knecht & Adams.)	
	Adamson, Alfred. (See Clark, John, assignor.)	
104,400	Adamson, David, Germany. Lubricator	June 21, 1870
106,448	Adamson, William, Philadelphia, Pa. Manufacture of glue	Aug. 16, 1870
109,706	Same.....Dyeing disintegrated fibers	Nov. 29, 1870
	Adamson, William, and Anthony Van Haagen, (two cases.) (See Van Haagen & Adamson.)	
	Adamson, William B., and Archibald Munro. (See Munro & Adamson.)	
105,405	Aderhold, Luna J., Wedowee, Ala. Hoe	July 19, 1870
99,387	Adler, George W., assignor to self and George Bochius, Philadelphia, Pa. Compound for bating and raising hides	Feb. 1, 1870
99,617	Adriance, John P., and Thomas S. Brown, Poughkeepsie, N. Y. Grain platform for harvesters	Feb. 8, 1870
98,656	Adt, John, assignor to the Judd Manufacturing Company, New Haven, Conn. Screw and nut for clamps, &c.	Jan. 11, 1870
110,326	Adt, John, New Haven, Conn. Twine-holder	Dec. 20, 1870
	Adt, John B., and Ernst Frank. (See Frank & Adt.)	
	Affron, John W., and S. Thompson Barton. (See Barton & Affron.)	
3,788	Ager, Wilson, Washington, D. C. Grain-cleaner.....(Reissue, division A)	Jan. 11, 1870
3,789	Same.....same.....(Reissue, division B)	Jan. 11, 1870
	Agnew, Daniel, and Thomas Bishop. (See Bishop & Agnew.)	
	Ahren, Philip P. (See Parmele, William A., assignor.)	
107,585	Ahrend, Herrmann, Newark, N. J. Lock for pianos, &c	Sept. 29, 1870
106,019	Ahrens, Theodore, Louisville, Ky. Preserving and delivering beer, ale, &c., on draught by means of carbonic acid gas	Aug. 2, 1870
106,020	Same.....Beer faucet	Aug. 2, 1870
	Aiken, William A. (See Vickers, John H., assignor.)	
	Same.....(See Appleton, Henry P., assignor.)	
	Ainsworth, Benn, et al. (See Eaton, Ainsworth & Scott.)	
	Ainsworth, Eleazer, et al. (See Sharp, Ainsworth & Sabatton.)	
98,902	Ainsworth, Squire, Pittsburg, Pa. Washing-machine	Jan. 18, 1870
98,539	Akers, William C., Petersburg, Va. Mole-trap	Jan. 4, 1870
103,407	Akley, James D., and Richard English, Oil City, Pa. Device for adjusting cross-heads of locomotives	May 24, 1870
104,401	Albaugh, James, Lyons, N. Y. Potato-digger	June 21, 1870
106,533	Albaum, Franz, Green Point, N. Y. Sheet-metal can	Aug. 23, 1870
107,849	Albee, James, assignor to Moses Pond & Co., Chelsea, Mass. Cooking-range	Oct. 4, 1870
100,327	Albertson, Ichabod H., Bedia, Texas. Combined lint-room and cotton-press	Dec. 20, 1870
103,821	Albertson, James M., New London, Conn. Construction of horse-power for cotton-gins, &c. (Antedated May 30, 1870)	June 7, 1870
	Albertson, Oliver, and Augustin Ellis. (See Ellis & Albertson.)	
103,956	Albright, Chester E., Muncy, Pa. Manger	June 7, 1870
99,388	Albright, Isaac, jr., and Joel Y. Bloomingdale, New Salem, N. Y. Wagon-tongue support	Feb. 1, 1870
	Albro, William H. (See Dick, James M., assignor.)	
	Same.....same.....(Reissue.)	
98,729	Alcorn, David, and John Walsh, New York, N. Y. Sheet-iron wash-tub and bucket	Jan. 11, 1870
100,835	Alden, Charles, Newburg, N. Y. Apparatus for drying and evaporating	Mar. 15, 1870
101,562	Same.....Preparing tomatoes and other fruits and vegetables to be used as food	April 5, 1870
4,010	Alden, Charles, assignor of part interest to Alden Fruit Preserving Company, Newburg, N. Y. Apparatus for evaporating the moisture from animal and vegetable substances. (Reissue, division A)	June 7, 1870
4,011	Same.....same.....(Reissue, division B)	June 7, 1870
98,540	Alden, Henry A., Matteawan, N. Y. Vulcanized India-rubber car-spring	Jan. 4, 1870
100,096	Alden, Henry A., assignor to New York Rubber Company, Matteawan, N. Y. Vulcanized rubber-hose	Feb. 22, 1870
110,532	Alden, James M., assignor to International Screw-Nail Company, New York, N. Y. Wood-screw machine	Dec. 27, 1870
	Alden, John C., et al. (See Carver, Joseph Eleazer, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
115,406	Aldred, Samuel, Avoca, Wis. Ring for harness.....	July 19, 1870
104,813	Aldrich, Robert, assignor to self and E. D. Wilcox, Forest Dale, R. I. Flock-grinder.....	June 28, 1870
103,119	Alesworth, John W., Santa Cruz, Cal. Machine for jointing staves.....	May 17, 1870
99,046	Alexander, Columbus, <i>et al.</i> (See Russell, James F., assignor.)	
104,402	Alexander, Horace Clifton, New York, N. Y. Can-opener.....	Jan. 25, 1870
105,157	Same.....Safety-cap for cans.....	June 21, 1870
104,683	Same.....same.....	July 12, 1870
101,409	Alexander, Israel, San Francisco, Cal. Belt-buckle.....	June 28, 1870
101,961	Alexander, Joseph B., Washington, D. C. Lamp-shade supporter.....	April 5, 1870
4,148	Same.....Lamp.....	April 12, 1870
	Same.....Lamp-burner.....(Design).....	June 14, 1870
99,744	Alexander, J. P. (See Eberhard, William, assignor.)	
98,730	Alfred, William D., and J. H. Pitkin, Cuyahoga Falls, Ohio. Pipe-coupling....	Feb. 15, 1870
107,148	Algeo, William G., Allegheny, Pa. Coffin.....	Jan. 11, 1870
	Alger, Darius, assignor to self and Theodore Barnum, Byron, Mich. Automatic cradle.....	Sept. 6, 1870
	Alger, Samuel B., <i>et al.</i> (See Jerome, Alger & Sage.)	
101,205	Alger, Samuel B., and Clinton H. Sage. (See Sage & Alger.)	
105,763	Alicott, Alonzo, Haverhill, Mass. Anti-friction carriage-axle.....	Mar. 29, 1870
100,244	Allegrette, Ignazio, Philadelphia, Pa. Refrigerator.....	July 26, 1870
	Allen, Albert F., Providence, R. I. Suction-hose.....	Mar. 1, 1870
4,012	Same.....(See Bean, Charles, assignor.)	
	Allen, Alexander, Rochester, N. Y. Fire-alarm signal and apparatus. (Reissue, Division A).....	June 7, 1870
4,013	Same.....(Reissue, Division B).....	June 7, 1870
101,806	Allen, Almon N., and Rodney H. Dewey, Pittsfield, Mass. Apparatus for lighting and extinguishing gas.....	April 12, 1870
	Allen, Alpheus N., <i>et al.</i> (See Davis, Blakeslee & Allen, assignors.)	
98,731	Allen, Arthur M., New York, N. Y. Car-brake.....	Jan. 11, 1870
3,790	Same.....Railway-car brake.....(Reissue).....	Jan. 11, 1870
99,127	Same.....Toy-propeller.....	Jan. 25, 1870
99,389	Same.....same.....	Feb. 1, 1870
101,076	Same.....Toy-rolling cage.....	Mar. 22, 1870
163,957	Same.....Velocipede.....	June 7, 1870
108,427	Same.....Treadle-motion.....	Oct. 18, 1870
110,533	Same.....Treadle.....	Dec. 27, 1870
106,647	Allen, Augustus, Cass County, Mich. Method of preventing decay in the timbers of bridges, buildings, &c.....	Aug. 23, 1870
109,793	Allen, Austin W., Indianapolis, Ind. Knitting-machine and needle.....	Dec. 6, 1870
107,586	Allen, Austin W., and Charles Reitz, Indianapolis, Ind. Mail-box.....	Sept. 20, 1870
105,158	Allen, Charles L., assignor to self and William Shick, Flat Rock, Mich. Fan-case for grain and seed separators.....	July 12, 1870
109,368	Allen, Daniel R., Cumberland, Me. Seat for vehicles.....	Nov. 22, 1870
108,749	Allen, Edwin F., assignor to self, Charles Campbell, and Elmer A. Beaman, Providence, R. I. Friction-pulley.....	Nov. 1, 1870
	Allen, Elisha. (See Barbour, Joseph W., assignor.)	
110,328	Allen, Frank, Erie, Pa. Revolving refrigerator.....	Dec. 20, 1870
100,708	Allen, George B., Norwalk, Conn. Combined lock and latch.....	Mar. 15, 1870
	Allen, Gerard B., and Company, <i>et al.</i> (See Fisher & Reid, assignors.)	
108,428	Allen, Horace R., Indianapolis, Ind. Truss.....	Oct. 18, 1870
100,245	Allen, John P., Springfield, Ohio. Main-spring barrel for watches.....	Mar. 1, 1870
100,246	Allen, John P., and William E. Banta, Springfield, Ohio. Watch-regulator.....	Mar. 1, 1870
101,206	Allen, John P., Dawson, Ga. Cotton-seed planter.....	Mar. 29, 1870
107,149	Allen, Joshua G., Philadelphia, Pa. Railroad-car heater.....	Sept. 6, 1870
105,620	Allen, Julian, and John Fanning, assignors to American Cigar Machine Company, Brooklyn, N. Y. Cigar-machine.....	July 26, 1870
110,329	Allen, Nathaniel P. and Nathaniel E., Salem, Mass. Grapnel.....	Dec. 20, 1870
101,342	Allen, Nelson E., Trenton, Israel B. Record, James Rood, and Jasper Hayden, Beaver Dam, Wis. Seeder and cultivator combined.....	Mar. 29, 1870
105,407	Allen, Richard N., Pittsford, Vt. Car-coupling.....	July 19, 1870
110,105	Allen, Robert, Cleveland, Ohio. Cheese-press.....	Dec. 13, 1870
4,092	Allen, Samuel Leeds, Cinnaminson, N. J. Planing-machine.....(Reissue).....	Aug. 9, 1870
108,672	Same.....Planting and fertilizing machine.....	Oct. 25, 1870
103,275	Allen, Stephen M., Boston, Mass. Preparing the fiber of ramie and other plants.....	May 24, 1870
105,025	Allen, Warren, Oswego, N. Y. Door-spring.....	July 5, 1870
110,415	Allen, William A., Baltimore, Md. Wood-splitting machine.....	Dec. 27, 1870
109,859	Alley, Blaney L., Salem, and Thomas W. Shapleigh, Cambridgeport, Mass. Tree-protector.....	Dec. 6, 1870
100,097	Allgaier, John, Philadelphia, Pa. Hand-motive carriage.....	Feb. 22, 1870
110,534	Alling, Albert, Chicago, Ill. Cope for casting car-wheels.....	Dec. 27, 1870
105,621	Alling, Prudden, Norwalk, Ohio. Seed-planter.....	July 26, 1870
4,258	Allinson, James, assignor to James Bromley & Brothers, Philadelphia, Pa. Carpet pattern.....(Design).....	July 26, 1870
103,276	Allison, Richard, New York, N. Y. Sweat-cloth for saddles.....	May 24, 1870
105,290	Allison, William Clare, Philadelphia, Pa. Pipe-coupling.....	July 12, 1870
98,541	Allonas, Joseph, assignor to C. Aultman and H. H. Taylor, Mansfield, Ohio. Lumber-drier.....	Jan. 4, 1870
107,994	Allonas, Joseph, Mansfield, Ohio. Thrashing-machine.....	Oct. 4, 1870
109,482	Same.....same.....	Nov. 22, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,879	Alloways, John, assignor to self and W. Cummings, Decatur, Ill. Gang-plow..	Aug. 2, 1870
101,699	Allport, William, New Britain, Conn. Door-bell .....	April 12, 1870
4,214	Same.....same.....(Design).....	July 12, 1870
103,699	Allstatter, Robert, Hamilton, Ohio. Harvester-cutter bar.....	May 31, 1870
	Allstatter, Robert, <i>et al.</i> (See Patton, Samuel, assignor.)	
98,732	Allyn, T. F., Nyack, N. Y. Railroad-car spring.....	Jan. 11, 1870
101,563	Same.....Car-spring.....	April 5, 1870
104,403	Allyn, William B., Boston, Mass. Rotary-pump.....	June 21, 1870
103,822	Almond, Thomas, Fitchburg, Mass. Skate-fastening.....	June 7, 1870
99,518	Almqvist, A. W., and F. W. Ofeldt, New York, N. Y. Cut-off valve-gear.....	Feb. 8, 1870
100,964	Same.....Water-meter.....	Mar. 22, 1870
	Almy, Charles T. (See Hackley, William, assignor.)	
100,836	Almy, George F., Toledo, Ohio. Spoke-lathe.....	Mar. 15, 1870
98,460	Alsing, Carl Petrus, New York, N. Y. Asphalt pavement.....	Jan. 4, 1870
99,128	Alsing, John Robert, England. Apparatus for pulverizing porcelain paste.....	Jan. 25, 1870
110,535	Altemus, William W., Philadelphia, Pa. Thread guide and holder for bobbin-winding machines.....	Dec. 27, 1870
99,390	Alter, Henry, Lakeport, Cal. Pruning-knife.....	Feb. 1, 1870
100,098	Same.....Wheelbarrow.....	Feb. 22, 1870
102,469	Alter, J. S., Leavenworth, Kans. Guide for sewing-machines.....	May 3, 1870
100,349	Altick, William, Dayton, Ohio. Parlor-fountain for diffusing liquids.....	Mar. 1, 1870
106,761	Altman, Moritz, Baltimore, Md. Neck-tie.....	Aug. 30, 1870
98,542	Alvord, Clark, Westford, Wis. Combined seeder and cultivator.....	Jan. 4, 1870
102,201	Same.....Cultivator.....	April 26, 1870
102,904	Alvord, Elijah S., Harmony, N. Y. Stanchion for securing cattle.....	May 10, 1870
106,910	Alvord, Henry J., assignor to self and Charles E. Bishop, Washington, D. C. Wood-pavement.....	Aug. 30, 1870
102,468	Alvord, Joseph D., Bridgeport, Conn. Die for drawing wire.....	May 3, 1870
109,994	Alvord, Joseph D., assignor to James Wilson, Bridgeport, Conn. Pump-piston.....	Dec. 13, 1870
106,246	Ambler, Nathan H., East Cleveland, Ohio. Magazine-gun.....	Aug. 9, 1870
109,167	Ambos, Herman F., Columbus, Ohio. Steam-engine.....	Nov. 15, 1870
102,470	Ambrun, Julius, Leavenworth, Kans. Straw-cutter. (Antedated April 28, 1870.)	May 3, 1870
104,921	Amende, Edward, Paris, Ky. Self-feeding fountain.....	July 5, 1870
	American Button Hole Overseaming and Sewing Machine Company. (See Reh-fuss, George.)	
	American Chair Seat Company, (3 cases.) (See Watkins, Gardner A., assignor.)	
	American Coal Barge Company. (See Hartley, Roger, assignor.)	
	American Eagle Steam Gauge Company. (See Campfield, Matthew E., assignor.)	
	American Flask and Cap Company, (2 cases.) (See Hoxsie, David K., deceased.)	
	American Gerner Boiler Company. (See Gerner, Henry, assignor.) ..(Reissue.)	
	American Metaline Company. (See Gwyon, Stuart, assignor.)	
	American Metallic Tubing Company. (See Smith, Charles G., assignor.)	
	American Mortising Machine Company. (See Smith, Henry C., assignor.)	
	American Seal Lock Company. (See Corbett & Brooks, assignors.)	
	American Segar Manufacturing Company. (See Allen & Fanning, assignors.)	
	American Stair Rod Company, (2 cases.) (See Uhry, H., assignor.)	
	American Standard Tool Company. (See Morse, Stephen A., assignor.)	
	American Steam Fire-Proof Safe Company. (See Burton, Stephen J., assignor.)	
	American Suspender Company. (See Dayton, John W., assignor.)	
	American Water Purifying Company. (See Thompson, John A., assignor.)	
	American Whip Company, (2 cases.) (See Hull, Liverus, assignor.)	
	American Wood Protection Company, (3 cases.) (See Cresson, Charles M., assignor.)	
106,534	Ames, Franklin, North Bridgewater, Mass. Machine for ruling slate.....	Aug. 23, 1870
105,622	Ames, Gustavus, assignor to self and William H. Cilley, New York, N. Y. Apparatus for reducing wood to pulp.....	July 13, 1870
3,973	Ames, James, Indianapolis, Ind. Masonic chart.....(Design).....	April 19, 1870
	Ames Manufacturing Company. (See Hadley, Charles F., assignor.)	
101,968	Amick, John, Assumption Parish, La. Spider furnace for burning bagasse.....	April 19, 1870
4,044	Same.....Spider arch for burning bagasse.....(Reissue).....	June 28, 1870
	Amidon, Charles H., and Levi J. Gunn. (See Moore, A. C., assignor.) ..(Reissue.)	
	Amigh, George W. (See Corbett, Henry V., assignor.)	
103,408	Amory, Jonathan, West Roxbury, Mass. Steam-generator and furnace.....	May 24, 1870
103,120	Amsdell, Dexter, Hamburg, N. Y. Steam-generator.....	May 17, 1870
	Anchors, James H. and Allen, <i>et al.</i> (See Donnelly and James H. and Allen Anchors.)	
101,807	Ancona, A. C., Evansville, Ind. Oil-cup.....	April 12, 1870
103,483	Same.....Safety-valve.....	Nov. 22, 1870
108,867	Anders, George L., assignor to self and E. B. Welch, Boston, Mass. Printing telegraph.....	Nov. 1, 1870
105,159	Anderson, Alexander G., assignor to self and A. W. Anderson, Quincy, Ill. Machine for dressing stone.....	July 12, 1870
100,965	Anderson, Aron, South Bend, Ind. Table-leaf support.....	Mar. 22, 1870
109,860	Anderson, Charles R., St. Louis, Mo. Clothes-drier.....	Dec. 6, 1870
102,354	Anderson, Charles T., Clarksburg, Md. Churn.....	April 26, 1870
100,247	Anderson, C. W., Grosvornordale, Conn. Stop-mechanism for cording-machine.....	Mar. 1, 1870
99,807	Anderson, David, Philadelphia, Pa. Paddle-wheel.....	Feb. 15, 1870
98,657	Anderson, D. M., Twinsburg, Ohio. Velocipede sleigh.....	Jan. 11, 1870
3,891	Anderson, E. F., Mansfield, Conn. Teachers' toy.....(Reissue).....	Mar. 22, 1870
	Anderson, E. Willoughby, and Moses Palmer, jr. (See Palmer & Anderson.)	
108,083	Anderson, George A., and Charles J. Baker, Albany, N. Y. Meat and vegetable masher.....	Oct. 11, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,748	Anderson, Harrison, Peoria County, Ill. Steam-engine condenser.....	Sept. 27, 1870
107,850	Same.....Peoria, Ill. Feed-water heater.....	Oct. 4, 1870
	Anderson, Horatio. (See Cushing, George W., assignor.)	
	Anderson, Isaac. (See Morgans, William T., assignor.)	
101,473	Anderson, James, deceased, by Samuel Kingan, administrator, New York, N. Y. Machine for the manufacture of felted fabrics for roofing, &c.....	April 5, 1870
103,199	Same.....Manufacture of roofing felt.....	May 17, 1870
106,021	Anderson, James, and William Ferguson. (See Ferguson & Anderson.)	
100,000	Anderson, James H., Terre Haute, Ind. Broom, &c.....	Aug. 2, 1870
	Anderson, John, Brooklyn, N. Y. Sun-bonnet for horses.....	Feb. 22, 1870
100,099	Anderson, John, et al. (See Battersby, William Augustus, assignor.)	
103,538	Anderson, John A., Chicago, Ill. Photographic screen.....	Feb. 22, 1870
	Anderson, Lauritz, Chicago, Ill. Binding attachment for sewing-machines. (Antedated May 3, 1870).....	May 31, 1870
107,995	Anderson, Lewis, Chicago, Ill. Spring-bed.....	Oct. 4, 1870
	Anderson, O. H. P. (See Smith, Thomas S., assignor.)	
100,837	Anderson, Samuel Jones, Cazenovia, N. Y. Railway-car coupling.....	Mar. 15, 1870
102,202	Same.....Coal scuttle.....	April 23, 1870
	Anderson, Samuel J., and Ezekiel P. Moore. (See Moore & Anderson.)	
100,248	Anderson, Smith W., New York, N. Y. Chameleotrope.....	Mar. 1, 1870
4,098	Anderson, Thomas K., Hornellsville, N. Y. Stove-pipe thimble.....(Reissue)...	Aug. 16, 1870
103,539	Anderson, Valerius D., Kewanee, Ill. Boiler-feeder and low-water alarm.....	May 31, 1870
109,484	Anderson, William W., Camden, N. J. Thill-coupling.....	Nov. 22, 1870
101,808	Andrew, Matthew, Melbourne, Col. of Victoria. Attaching knobs to spindles.....	April 12, 1870
4,014	Same.....Tap for oil vessels.....(Reissue)...	June 7, 1870
4,114	Same.....Attaching knobs to spindles.....(Reissue)...	Sept. 6, 1870
99,803	Andrew, Moses L., Cincinnati, Ohio. Planing-machine.....	Feb. 15, 1870
104,404	Andrews, Albert L., Bristol, Conn. Anger-bit. (Antedated Dec. 21, 1869).....	June 21, 1870
106,762	Andrews, Charles, Providence, R. I. Lubricating-box.....	Aug. 30, 1870
101,343	Andrews, Emanuel, Williamsport, Pa. Saw-mill.....	Mar. 29, 1870
103,700	Same.....Saw-frame.....	May 31, 1870
104,035	Same.....Handle for cross-cut saws.....	June 14, 1870
	Same.....Machine for grinding saws.....(Disclaimer filed)...	Dec. 5, 1870
	Same.....same.....(Extension).....	Dec. 12, 1870
99,278	Andrews, Jacob K., East Lampeter Township, Pa. Mode of attaching horses to vehicles.....	Feb. 1, 1870
103,982	Andrews, James H., Benicia, Cal. Gang-plow.....	Sept. 6, 1870
	Andrews, John S. (See Noyes, Alpheus P., assignor.)	
106,763	Andrews, Thomas, Warren, Wis. Gate.....	Aug. 30, 1870
100,838	Andrews, William D., New York, N. Y. Centrifugal-pump.....	Mar. 15, 1870
100,839	Same.....Friction-wheel for gearing.....	Mar. 15, 1870
110,330	Same.....Brook Haven, N. Y. Rotary-pump.....	Dec. 20, 1870
110,331	Same.....Hoisting-apparatus.....	Dec. 20, 1870
101,564	Andrews, William H., assignor to Burton Mallory, New Haven, Conn. Door-lock.....	April 3, 1870
105,026	Same.....Reversible-latch.....	July 5, 1870
101,077	Andrews, William J., Columbia, Tenn. Cotton-cultivator.....	Mar. 22, 1870
	Androvatt, Jacob W., and J. W. Slaughter. (See Slaughter & Androvatt.)	
109,861	Andrus, R. C., Poughkeepsie, N. Y. Corpse-preserver. (Antedated Dec. 3, 1870)	Dec. 6, 1870
103,005	Anesley, George W., Marengo Township, Mich. Pruning-tool.....	May 17, 1870
104,684	Angle, Charles, Hazel Green, Mich. Animal-trap.....	June 28, 1870
104,814	Angster, Lawrence, Newark, N. J. Refrigerator for condensing vapors from fermenting vats in breweries, &c.....	June 28, 1870
104,685	Angus, John and John P., Mindenville, N. Y. Quilting-frame.....	June 23, 1870
4,503	Annable, Benjamin R., and John P. Friend. (See Friend & Annable.)	
	Annan, Charles F., assignor to self and Herbert S. Merrill, Boston, Mass. Frame for a paper-bag machine.....(Design)...	Dec. 6, 1870
110,536	Same.....Paper-bag machine.....	Dec. 27, 1870
110,537	Same.....Adjustable cam.....	Dec. 27, 1870
100,709	Annan, Charles F., Boston, Mass. Ships' block.....	Mar. 15, 1870
4,511	Annis, Emeline T., Mount Morris, N. Y. Lamp-chimney cleaner.....(Design)...	Dec. 6, 1870
110,106	Annis, Truman M., and Thomas B. Luce, Linden, Mich. Barrel chamfering and crozing machine.....	Dec. 13, 1870
104,686	Ansell, George Frederick, England. Manufacture of iron and steel.....	June 30, 1870
101,565	Ansley, Henry, Washington, D. C. Die for forming sleeve-buttons.....	April 3, 1870
	Anthony, E. and H. T., & Co. (See Murphy, Peter, assignor.)	
105,408	Anthony, John H., Cambridge, Md. Tobacco-pipe.....	July 19, 1870
99,279	Anthony, Richard, assignor to self and Thomas Williams, Luzerne County, Pa. Railway-rail chair.....	Feb. 1, 1870
107,433	Anthony, Sherman E., Stillwater, N. Y. Potato-digger. (Antedated Sept. 10, 1870).....	Sept. 20, 1870
105,160	Antiguedad, Ramon, New York, N. Y. Manufacture of tobacco-paper.....	July 12, 1870
101,207	Apgar, Allen S., assignor to self and Isaac Arnold, jr., New York, N. Y. Screw and screw-driver.....	Mar. 29, 1870
	Aplin, Stephen A., et al. (See Magee, James, assignor.)	
	Apperly, James, and William Clissold, England. Machinery for preparing fibrous substances for spinning.....(Extension)...	Dec. 3, 1870
106,022	Apperly, William, Louisville, Ky. Cotton-picker.....	Aug. 2, 1870
	Apple, Jacob. (See McLaughlin, John, assignor.)	
104,244	Applegate, Joseph F., New Albany, Ind. Bung.....	June 14, 1870
106,023	Same.....same.....	Aug. 2, 1870
101,078	Applegate, Joseph F., and Caspar Feiock, New Albany, Ind. Bung.....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,749	Appleton, Charles J., assignor to self, Earl L. and S. Edward Stimson, Cohoes, N. Y. Knit-fabric .....	Sept. 27, 1870
107,750	Same.....Knitting-machine.....	Sept. 27, 1870
107,587	Appleton, Henry P., assignor to William A. Aiken, Norwich, Conn. Reversible-knob latch .....	Sept. 20, 1870
4,387	Appleton, Thomas, Lake Village, N. H. Stocking.....(Design).....	Oct. 11, 1870
106,648	Appleton, T. L. (See Tucker, Charles E., assignor.)	
3,784	Appold, Samuel A., Baltimore, Md. Steam-coupling for railroad cars.....	Aug. 23, 1870
100,840	Arbeiter, Joseph, assignor to Samuel Coit, East Hartford, Conn. Lawn-mower. (Reissue) .....	Jan. 4, 1870
	Same.....Lawn-mower.....	Mar. 15, 1870
110,417	Archer & Pancoast Manufacturing Company. (See Deavs, Charles, assignor.)	
103,823	Archer, James, Springfield, Wis. Plow .....	Dec. 27, 1870
	Archer, John H., Vermont, Tex. Drawing off tallow, lard, &c., from rendering-tanks .....	June 7, 1870
100,100	Archer, William S., Dayton, Ohio. Broadcast-seeder .....	Feb. 22, 1870
106,449	Archibald, Edward A., Methuen, Mass. Manufacture of wheels .....	Aug. 16, 1870
108,952	Arden, Henry, St. Louis, Mo. Electro-magnetic lock .....	Nov. 8, 1870
104,405	Arey, Isiah H., Boscawen, N. H. Violin-holder .....	June 21, 1870
103,206	Arey, John P., Col. Ter. Furnace for roasting, oxidizing, and chloridizing ore..	May 17, 1870
102,645	Arlen, Charles, and Charles Gautschi, New York, N. Y. Screw-propeller .....	May 3, 1870
108,230	Arman, Jean Lucien, France. Propelling vessels .....	Oct. 11, 1870
	Armeling, Charles C. G. (See Keen, Jacob M., assignor.)	
102,646	Armington, William W., assignor to self, Stephen L. Usber, and Fred. A. Walton, New Haven, Conn. Stove-black box .....	May 3, 1870
106,450	Arms, James C., Northampton, Mass. Manufacture of pocket-books.....	Aug. 16, 1870
100,101	Arms, John L., St. Louis, Mo. Railroad-switch .....	Feb. 22, 1870
109,995	Armstrong, Benjamin A., assignor to self, James P. Brainerd, and Leonard O. Smith, Jersey City, N. J. Holder for silk, &c.....	Dec. 13, 1870
3,969	Armstrong Company. (See Rose & Calely, assignors).....(Design).....	
	Armstrong, Daniel, Chicago, Ill. Machine for making wrought-nails. (Reissue) ..	May 17, 1870
	Armstrong, Frank. (See House, Henry A., assignor).....(Two cases).....	
103,540	Armstrong, George, assignor to self and William H. Eckert, England. Barrel-filter .....	May 31, 1870
110,416	Armstrong, George B., Chicago, Ill., and George F. McLellan, Washington, D. C. Railroad-car ventilator .....	Dec. 27, 1870
3,834	Armstrong, James, Encyrus, Ohio. Feed-water heater and filter.....	Feb. 15, 1870
109,996	Armstrong, Jasper, Brookfield, Mo. Safety-valve .....	Dec. 13, 1870
108,429	Armstrong, John R., administrator. (See Bonner, Thomas E.)	
	Armstrong, Joseph, England. Method of forming bifurcated ends of railway-crossings .....	Oct. 18, 1870
105,623	Armstrong, Maurice, Girard, Ill. Adjustable door-sill.....	July 26, 1870
100,966	Armstrong, Uel W., and Ira Keeney, assignors to U. W. Armstrong, Evansville, Ind. Rubber-connection for mosquito-net frames.....	Mar. 22, 1870
104,245	Same.....Metallic-connection for mosquito-net frames .....	June 14, 1870
108,673	Armstrong, William, assignor to self and Ezra Miller, Kent, Ohio. Lubricating-device for bolt-threading machines .....	Oct. 25, 1870
3,974	Armstrong, William M., Middletown, Ohio. Buggy-body.....(Design).....	April 19, 1870
103,953	Arnau, Derk, Boston, Mass. Sideboard and extension-table.....	June 7, 1870
106,911	Arndt, Daniel, Cleveland, Ohio. Cement .....	Aug. 30, 1870
	Arndt, Peter, et al. (See Nicholson, Frederic, assignor.)	
106,024	Arney, Solomon, and Elias Fiscus. (See Fiscus & Arney.)	
93,461	Arnheim, Eugene, New York, N. Y. Fabric for head-coverings .....	Aug. 2, 1870
106,105	Arnold, Benjamin, East Greenwich, R. I. Machine for making nets.....	Jan. 4, 1870
	Arnold, Francis Y., Philadelphia, Pa. Non-conducting casing for boilers, steam-pipe, &c.....	Aug. 9, 1870
103,277	Arnold, Isaac, jr. (See Apgar, Allen S., assignor.)	
	Arnold, James, Pawtucket, R. I. Stopping-mechanism for doubling, spooling, and like machines.....	May 24, 1870
107,319	Arnold, Merritt T., Summit, R. I. Kindling-wood.....	Sept. 13, 1870
106,106	Arnold, Olney, and Isaac Lindsley, assignors to Pawtucket Hair-Cloth Company, North Providence, R. I. Machine for trimming and shearing cloth, &c.....	Aug. 9, 1870
110,332	Arnold, Roberson, Suffolk, Va. Bee-hive .....	Dec. 20, 1870
104,406	Arnold, Samuel, Silver Springs, Tenn. Animal-trap .....	June 21, 1870
105,880	Same.....same.....	Aug. 2, 1870
104,532	Arnold, Satterlee, Claverack, N. Y. Mode of uniting the edges of knitted goods	June 21, 1870
105,409	Arnold, Stephen D., assignor to P. and F. Corbin, New Britain, Conn. Shutter-fastening .....	July 19, 1870
106,025	Arnold, Varnum G., Providence, R. I. Knitting-machine.....	Aug. 2, 1870
109,794	Arnold, William A., Rockport, Mass. Cloth-winding mechanism for looms.....	Dec. 6, 1870
4,446	Aronson, Albert, New York, N. Y. Collar-box.....(Design).....	Nov. 1, 1870
100,001	Arrington, Joseph, Livingston, Ala. Seed-planter and fertilizer-distributor.....	Feb. 22, 1870
101,208	Arrington, William J., Jefferson County, Ga. Carriage-wheel hub .....	Mar. 29, 1870
103,701	Arson, Lewis Francis Alexandre, France. Correcting the deviation of the mariner's compass .....	May 31, 1870
	Arthur, John, and Alexander Ross. (See Ross & Arthur.)	
104,533	Arthur, William, Newport, Ky. Steam-generator .....	June 21, 1870
105,764	Ascough, William, Buffalo, N. Y. Vent for casks .....	July 26, 1870
	Ashburner, Samuel. (See Cushing, Samuel B., assignor).....(Disclaimer).....	
4,045	Ashcroft, Edward H., Lynn, Mass. Non-corrosive valve-seat.....(Reissue).....	June 28, 1870
110,418	Ashcroft, Edward H., Boston, Mass. Machine for burring wool on the skin .....	Dec. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,410	Ashcroft, John, New York, N. Y. Faucet.....	April 5, 1870
	Ashcroft, John. (See Patterson, James Willard, assignor.)	
104,534	Ashe, Robert, Boston, Mass. Boot and shoe.....	June 21, 1870
106,983	Asher, James R., assignor to self and Robert I. Robeson, Oscaloosa, Iowa. Egg-carrier.....	Sept. 6, 1870
107,320	Ashley, John T., Brooklyn, E. D., N. Y. Paper-feeding apparatus.....	Sept. 13, 1870
107,851	Same.....same.....	Oct. 4, 1870
102,203	Ashworth, Daniel, Wappinger's Falls, N. Y. Apparatus for mixing hydrogen and air.....	April 26, 1870
100,249	Ashworth, John, North Andover, Mass. Steam-trap.....	Mar. 1, 1870
106,306	Same.....Harness-operating mechanism for looms.....	Aug. 16, 1870
98,835	Asire, Daniel, Ada, Ohio. Device for soldering eaves-troughs.....	Jan. 18, 1870
	Asmann, Albert, <i>et al.</i> (See Compton & Toms, assignors.)	
104,687	Aspinall, William, Philadelphia, Pa. Lappet-loom.....	June 28, 1870
101,809	Aspinwall, L. Augustus, Albany, N. Y. Corn-husker.....	April 12, 1870
4,099	Same.....Machine for husking corn.....(Reissue).....	Aug. 16, 1870
4,174	Same.....same.....(Reissue).....	Nov. 8, 1870
	Aspinwall, Sterne F. (See Snow, Charles P., assignor.)	
103,541	Assmann, Albert, Rahway, N. J. Weighing-scale.....	May 31, 1870
99,809	Atha, Simeon, West Liberty, Ohio. Carriage-wheel hub.....	Feb. 15, 1870
109,707	Same.....same.....	Nov. 29, 1870
	Atherton, Abel T., <i>et al.</i> (See Hollowell, Albert, assignor.)	
103,409	Atkins, Charles M., and Alexander Govan, Pottsville, Pa. Furnace for roasting ore.....	May 24, 1870
101,810	Atkinson, Mahlon B., Georgetown, D. C. Churn.....	April 12, 1870
107,321	Atkinson, Mahlon B., assignor to self and James H. Welch, Georgetown, D. C. Potato and fruit peeler.....	Sept. 13, 1870
102,204	Atterbury, J. S. and T. B., Pittsburg, Pa. Lamp.....	April 26, 1870
103,702	Same.....Jelly-glass.....	May 31, 1870
4,225	Same.....Jelly-cup.....(Design).....	July 19, 1870
4,259	Same.....Lamp.....(Design).....	July 26, 1870
4,298	Same.....Lamp-stand.....(Design).....	Aug. 23, 1870
4,457	Same.....Ornamentation of glassware.....(Design).....	Nov. 8, 1870
109,369	Same.....Glass-lamp.....	Nov. 22, 1870
109,370	Same.....Manufacture of lamps.....	Nov. 22, 1870
3,854	Atterbury, Thomas B., assignor to William Doyle, Pittsburg, Pa. Ornamenting glassware.....(Design).....	Feb. 22, 1870
	Atwater, Benham, and Company. (See Fitzmaier, Louis, assignor).....(Reissue.)	
98,903	Atwater, John H., Oshtemo, Mich. Drawing-knife.....	Jan. 18, 1870
4,390	Atwater, Joseph H., Providence, R. I. Black-board eraser.....(Design).....	Oct. 11, 1870
	Atwood & McCaffrey. (See Snyder, August, assignor.)	
103,311	Atwood, Carell, Lebanon, Ill. Gang-plow.....	Oct. 18, 1870
103,291	Atwood, Corydon F., assignor to James F. Wiley and Vincent C. Price, Hancock, Wis. Time-lock.....	July 12, 1870
107,322	Atwood, James E., Pittsburg, Pa. Refining iron and steel.....	Sept. 13, 1870
103,084	Same.....Crucible for melting iron and steel. (Antedated Oct. 8, 1870).....	Oct. 11, 1870
100,350	Atwood, John E., Willimantic, Conn. Horse-power.....	Mar. 1, 1870
109,708	Atwood, John E., Mansfield, Conn. Traverse-motion for winding and spooling machinery.....	Nov. 29, 1870
100,709	Same.....Pulley-coupling.....	Nov. 29, 1870
	Atwood, John E., and A. S. Whittemore. (See Whittemore & Atwood.)	
98,836	Atwood, Lewis J., assignor to Holmes, Booth, and Haydens, Waterbury, Conn. Lamp-burner.....	Jan. 18, 1870
99,810	Atwood, Loring, and Edward Ripley, assignors to selves and Baxter T. Whitney, Rutland, Vt. Wood-turning lathe. (Antedated Feb. 5, 1870).....	Feb. 15, 1870
99,129	Aubin, N., Albany, N. Y. Peat-auger.....	Jan. 25, 1870
99,130	Same.....Peat-molding machine.....	Jan. 25, 1870
	Aubin, N., and Edwin James Hulbert. (See Hulbert & Aubin.)	
105,881	Aubin, Nicholas Napoleon, Portland, Conn. Peat-machine.....	Aug. 2, 1870
	Ancherman, John R. (See Orewiler, Michael, assignor.)	
104,535	Auchincloss, William S., New York, N. Y. Apparatus for indicating the position of elevators.....	June 21, 1870
109,168	Augenstein, Moritz, Brooklyn, N. Y. Testing-instrument for brewers and distillers.....	Nov. 15, 1870
102,905	Augur, John B., Poughkeepsie, N. Y. Buggy-gearing.....	May 10, 1870
103,035	Same.....Gearing for wagons.....	Oct. 11, 1870
108,086	Aull, Adam A. and John A., Bellefontaine, Ohio. Bake-oven.....	Oct. 11, 1870
	Ault, Samuel, jr. (See McAvoy, Hugh L., assignor.)	
	Aultman, C. (See Bope, Jacob W., assignor).....(Two cases.)	
	Same.....(See Lee, George W., assignor.)	
	Same.....(See Allonas, Joseph, assignor.)	
101,079	Aurich, William, Chicago, Ill. Vapor-burner.....	Mar. 22, 1870
109,795	Austin, Charles Dudley, England. Lubricator.....	Dec. 6, 1870
99,811	Austin, Jacob M., assignor to self and William Tash, York, Pa. Soap-mixture.....	Feb. 15, 1870
105,540	Austin, James E., Oswego, N. Y. Shingle-machine.....	July 19, 1870
109,997	Austin, James M., assignor to Isaac Turner, Georgetown, Mo. Brick-machine.....	Dec. 13, 1870
	Austin, John, <i>et al.</i> (See Westcott, Charles S., assignor.)	
109,571	Austin, John W., Plaquemine, La. Apparatus for treating cane-juice with sulphurous-acid gas.....	Nov. 29, 1870
99,230	Austin, L., and Joshua E. Hall, Cleveland, Ohio. Powder-keg.....	Feb. 1, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,312	Austin, Phineas E., assignor to self and Leander Buell, New Haven, Conn. Feed-device for power-presses.....	Oct. 18, 1870
101,811	Austin, Solomon H., assignor to Wanton J. Austin, Providence, R. I. Cloth-stretching machine.....	April 12, 1870
106,764	Austin, Theodore P., New York, N. Y. Street-lamp.....	Aug. 30, 1870
	Austin, William H. ( <i>See Barrell, Thomas A., assignor.</i> )	
	Automatic Fire-Alarm Company. ( <i>See Abbott, Job, assignor.</i> )	
	Same.....( <i>See Cushman, Sylvanus D., assignor.</i> ).....(Three cases.)	
100,583	Averell, Ellicott D., and Joseph Malan, Brooklyn, N. Y. Vegetable and fruit peeler.....	Mar. 8, 1870
4,025	Same.....Vegetable and fruit peeler.....(Reissue).....	June 14, 1870
	Averell, George W., and Gardiner Hall, jr. ( <i>See Hall &amp; Averell.</i> )	
103,087	Averell, John D., and George A. Higgins, New York, N. Y., Thomas Gordon, Shrewsbury, N. J., assignors to George A. Higgins. Combined pump and siphon	Oct. 11, 1870
	Averell, William W. ( <i>See La Breche Viger, Louis, assignor.</i> ).....(Reissue.)	
3,813	Averill, Damon R., New Centreville, N. Y. Varnish.....(Division A, reissue).....	Feb. 1, 1870
3,814	Same.....Manufacture of varnish.....(Division B, reissue).....	Feb. 1, 1870
103,953	Averill, Henry K., New Oregon, Iowa. Fanning-mill.....	Nov. 8, 1870
	Averill, Levi. Lime-kiln.....(Extension).....	Aug. 17, 1870
	Avery, Benjamin F., Louisville, Ky. Plow.....(Disclaimer).....	Jan. 7, 1870
	Same.....same.....(Extension).....	Jan. 7, 1870
	Same.....( <i>See Wiard, Edward, assignor.</i> )	
107,323	Avery, Clark, San Francisco, Cal. Siding for buildings.....	Sept. 13, 1870
	Avery, John G., et al. ( <i>See Kent &amp; Bancroft, assignors.</i> )	
110,419	Avery, Robert H., Galesburg, Ill. Cultivator.....	Dec. 27, 1870
98,904	Avery, William, and Albert Fenton, assignors to William Avery, England. Needle-case.....	Jan. 18, 1870
102,471	Same.....same.....	May 3, 1870
100,102	Avery, William J., and Tunis Laberteaux, Marshall Township, Mich. Potato cultivator and digger.....	Feb. 22, 1870
	Avis, James F., and Elias Propst. ( <i>See Propst &amp; Avis.</i> )	
100,351	Axe, William R., Rockton, Ill. Barn-door hanger.....	Mar. 1, 1870
107,646	Axtell, Ephraim S., Macomb, Mich. Pulley for gates.....	Sept. 27, 1870
99,519	Ayaras, Benjamin, Greenwich, N. J. Thrashing-machine.....	Feb. 8, 1870
106,305	Aydelott, Henry C., Carthage, Ind. Cutting-apparatus for harvesters.....	Aug. 16, 1870
104,407	Ayers, Almon P., Chicago, Ill. Harvester.....	June 21, 1870
105,882	Ayers, Samuel S., assignor to self and Abram Sebring, Plainfield, N. J. Tube-well.....	Aug. 2, 1870
101,566	Aylworth, G. H., Brighton, Ill. Hay-press.....	April 5, 1870
102,647	Ayres, Isaac, Elkhart, Ind., and D. C. Payne, Delavan, Wis. Well-tube.....	May 3, 1870
100,488	Ayres, Parley J., Lydon, N. Y. Tire-upsetting machine.....	Mar. 8, 1870
99,745	Ayres, William G., and Seth L. Cole, Brooklyn, N. Y. Cigar-machine. (Ante-dated Feb. 9, 1870).....	Feb. 15, 1870
106,316	Baade, Charles T., Brooklyn, N. Y. Spring-bed bottom.....	Aug. 16, 1870
	Baader, J. Nicodemus, and Peter Funk. ( <i>See Funk &amp; Baader.</i> )	
103,824	Babbitt, Avery, and William W. Binny, assignors to selves and Solomon N. Bierce, Auburn, N. Y. Condenser for the manufacture of coal-gas.....	June 7, 1870
103,121	Babbitt, Benjamin T., New York, N. Y. Air-compressing apparatus.....	May 17, 1870
107,324	Same.....Process of obtaining glycerine from soap-makers' spent lye	Sept. 13, 1870
	Babbitt, Platt D. ( <i>See Bailey, Ralph P., assignor of part interest to Platt D. Babbitt.</i> ).....(Reissue.)	
99,281	Babbitt, Samuel, assignor to self and George W. Orr, Brazil, Ind. Boot and shoe.....	Feb. 1, 1870
105,161	Babbitt, Samuel, assignor to self and Joseph L. Hussey, Brazil, Ind. Awl.....	July 12, 1870
	Babcock, Alpheus, and William W. Huntley. ( <i>See Huntley and Babcock.</i> )	
107,210	Babcock, Franklin and Frederick, Middletown, Conn. Blind-fastener.....	Sept. 13, 1870
101,080	Babcock, James F., Boston, Mass. Spring for railroad-car.....	Mar. 22, 1870
99,618	Babcock, John, Cambridgeport, Mass. Composition for preparing wood for painting.....	Feb. 8, 1870
101,209	Babcock, Noyes E., and George D. Goodsell, Rockford, Ill. Knife.....	Mar. 29, 1870
	Same.....( <i>See Goodsell &amp; Babcock.</i> ).....(Two cases.)	
99,131	Bach, Louis, and L. C. Christlip, Tiffin, Ohio. Sawing-machine.....	Jan. 25, 1870
98,905	Bacharach, Moritz, New York, N. Y. Street-urinal.....	Jan. 18, 1870
105,624	Bache, Christian W., Philadelphia, Pa. Chimney-cowl.....	July 26, 1870
101,411	Bache, Richard Meade, Philadelphia, Pa. Elastic graduated-scale.....	April 5, 1870
	Bache, Robert C., and James R. Bancroft. ( <i>See Bancroft &amp; Bache.</i> )	
99,619	Bachelder, John, Norwich, Conn. Neck-tie.....	Feb. 8, 1870
100,250	Same.....Fastening for neck-ties.....	Mar. 1, 1870
100,710	Same.....Hay-loader.....	Mar. 15, 1870
	Same.....Sewing-machine.....(Extension).....	July 14, 1870
110,187	Bacher, Solomon, Edina, Mo. Planter and cultivator.....	Dec. 20, 1870
100,489	Bachman, Francis M., and Samuel Ricker, Fredericksburg, Pa. Faucet.....	Mar. 8, 1870
107,647	Bachman, William K., Columbia, S. C. Mouse-trap.....	Sept. 27, 1870
105,410	Backus, George M., Oil City, Pa. Sucker-rod connection.....	July 19, 1870
102,078	Backus, Quincy S., Winchendon, Mass. Process for facing valves and valve-seats for steam-engines.....	April 19, 1870
103,959	Bacon, Frank M., Plainfield, N. J. Washing-machine.....	June 7, 1870
4,095	Bacon, Fred Walton, New Haven, Conn. Seal or banner.....(Design).....	June 7, 1870
99,746	Bacon, Robert, assignor to self and Joseph Lincoln, jr., Boston, Mass. Cabinet.....	Feb. 15, 1870
	Bacon, William, et al. ( <i>See Thomas, John, assignor.</i> )	
105,765	Baden, Thomas E., Washington, D. C. Traveling-belt stop for machinery.....	July 26, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,472	Badger, William, Hastings-on-Hudson, N. Y. Washing-machine .....	May 3, 1870
	Baer, John H., <i>et al.</i> (See Deeds, William S., assignor.) .....	
99,132	Bagg, Albert G., New York, N. Y. Cheese-press .....	Jan. 25, 1870
107,211	Baggs, James T., Bridgeport, Ohio. Sawing-machine .....	Sept. 13, 1870
105,162	Bagley, Allen, Ypsilanti, Mich. Double-acting force-pump .....	July 12, 1870
101,412	Bailey, Albert R., Plantsville, Conn. Die for forging shear-bows .....	April 5, 1870
	Bailey, Alfred, Amesbury, Mass. Pegging-jack .....	July 23, 1870
	Bailey, Allen. (See Boyd, John G., assignor.) .....	
107,212	Bailey, Alonzo B., Cobalt, Conn. Coffin-handle .....	Sept. 13, 1870
100,103	Bailey, Alson S., Chicago, Ill. Coal-elevator .....	Feb. 22, 1870
103,960	Bailey, Bennett C., Constitution, Ohio. Pump .....	June 7, 1870
109,719	Same. Washing-machine .....	Nov. 29, 1870
109,371	Bailey, Charles S., Mobile, Ala. Hydraulic stop-valve. (Antedated Nov. 19, 1870) .....	Nov. 22, 1870
106,984	Bailey, Charles W., Boston, Mass. Detachable boot and shoe heel .....	Sept. 6, 1870
99,747	Bailey, Fortune L., Freeport, Ind. Washing-machine .....	Feb. 15, 1870
	Bailey, George W., and A. H. Knapp. (See Knapp & Bailey.) .....	
107,213	Bailey, Henry Dwight Wright, Sterling, Ill. Spring-bed bottom .....	Sept. 13, 1870
101,567	Bailey, H. F., Amsterdam, N. Y. Tablet for tombs .....	April 5, 1870
103,278	Bailey, Jacob B., New York, N. Y. Handle for knives .....	May 24, 1870
103,883	Bailey, John A., assignor to self, L. E. Webb, Joseph Lederle, Anthony Lederle, and John H. Wells, Detroit, Mich. Excavating-machine .....	Aug. 2, 1870
103,279	Bailey, John W., Aurora, Ind. Steam-engine .....	May 24, 1870
98,837	Bailey, Joseph R., Woonsocket, R. I. Tool-holder .....	Jan. 18, 1870
98,838	Same. same .....	Jan. 18, 1870
105,766	Bailey, Joseph R., assignor to self and Selden A. Bailey, Woonsocket, R. I. Box-scraper .....	July 26, 1870
105,767	Same. Bench-plane .....	July 26, 1870
4,057	Bailey, Ralph P., assignor of part interest to Platt D. Babbitt, Niagara Falls, N. Y. Machine for dressing marble .....	July 5, 1870
106,765	Bailey, Timothy, Wyoming, Ill. Combined harrow and roller .....	Aug. 30, 1870
107,434	Bailey, William, Troy, N. Y. Hydrant .....	Sept. 20, 1870
4,155	Same. same .....	Oct. 18, 1870
	Same. (See Kirk, Solomon W., assignor.) .....	
98,907	Bailey, W. N., Duplain, Mich. Combined latch and lock .....	Jan. 18, 1870
98,906	Baily, A. H., and W. G. Bratton, Marseilles, Ill. Leather channeling and folding tool .....	Jan. 18, 1870
108,231	Bainbridge, David, Philadelphia, Pa. Anvil-last .....	Oct. 11, 1870
	Bair, Brothers & Co. (See Bowker, James, assignor.) .....	
99,620	Baird, Francis R., Norfolk, Va. Hasp fastening for fruit-crates .....	Feb. 8, 1870
102,473	Baird, James M., assignor to self, John McLure, James W. Ward, and John Boone McLure, Wheeling, West Va. Fastening for bedsteads, tables, &c. (Antedated April 20, 1870) .....	May 3, 1870
100,584	Baird, James R., Vincennes, Ind. Carriage wheel .....	Mar. 8, 1870
106,247	Baird, John, and Warren Fisher, Hamilton, Ohio. Mica chimney for lamps .....	Aug. 9, 1870
101,210	Baird, Joseph H., Oakville, Conn. Hinge machine .....	Mar. 29, 1870
106,985	Baird, Thomas W., Bowling Green, Ky. Fireplace .....	Sept. 6, 1870
	Baisly, George H., and John Wilson. (See Wilson & Baisly.) .....	
104,246	Baker, Albert C., assignor to self and George L. Laffin, Westfield, Mass. Steam-radiator .....	June 14, 1870
98,543	Baker, Ansel Granville, and George Movier Ennis, New Bedford, Mass. Axle-box for carriages .....	Jan. 4, 1870
104,536	Baker, Benjamin, Addison, Mich. Grain-measuring attachment to thrasing-machines .....	June 21, 1870
	Baker, Charles J., and George A. Anderson. (See Anderson & Baker.) .....	
106,986	Baker, Charles L. W., Hartford, Conn. Mop. (Antedated August 25, 1870.) .....	Sept. 6, 1870
	Baker, C. S. (See Noyes, Walter B., assignor.) .....	
	Baker, David H., and C. S. Southwick. (See Southwick & Baker.) .....	
98,908	Baker, George W., Lincoln, Ill. Scaffold .....	Jan. 18, 1870
	Same. (See Morris, Lewis, assignor.) .....	
98,658	Baker, Haydu M., Washington, D. C., Process of cleaning cotton-waste and other fibers from oil, &c. .....	Jan. 11, 1870
101,969	Same. Manufacture of steel from cast or pig-iron .....	April 19, 1870
102,906	Same. Manufacture of soap .....	May 10, 1870
108,088	Same. Process for the manufacture of soda, hydrochloric acid, &c. .....	Oct. 11, 1870
108,089	Same. Brooklyn, Eastern Division, N. Y. Manufacture of aluminate of soda .....	Oct. 11, 1870
105,884	Baker, Haydu M., assignor to John M. Smith, Washington, D. C. Preparation of paper stock .....	Aug. 2, 1870
102,090	Baker, Haydu M., Williamsburg, N. Y. Manufacture of nitric acid .....	Oct. 11, 1870
99,048	Baker, Henry, assignor to self and Christian G. Herr, Lancaster, Pa. Stove-pipe damper .....	Jan. 25, 1870
109,862	Baker, Henry P., Centerville, Ind. Drain-tile machine .....	Dec. 6, 1870
110,333	Same. Combined land-roller and marker .....	Dec. 20, 1870
3,812	Baker, Henry N., assignor through mesne assignments to Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph .....	Jan. 25, 1870
	Baker, Henry W., Binghamton, N. Y. Printing-telegraph. (Extension) .....	April 28, 1870
3,854	Baker, Horace, assignor to Richard K. Sanford, Cortland, N. Y. Hay-raker and loader .....	Mar. 1, 1870
104,408	Baker, Isaac L., Prairie City, Kansas. Weaning-bit .....	June 21, 1870
104,096	Baker, Israel, Tomar, Wis. Washing-machine .....	June 14, 1870
	Baker, James H., <i>et al.</i> (See Warriner, Baker & Slocum.) .....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,812	Baker, John G., Wilmington, Del. Apparatus for tanning by infiltration.....	April 12, 1870
4,141	Baker, John Gulick, Philadelphia, Pa. Grinding-mill stand or frame. (Design)...	June 7, 1870
104,537	Same..... Grinding-mill.....	June 21, 1870
102,749	Baker, John W., Columbus, Ohio. Vapor-burner.....	May 10, 1870
104,815	Baker, Lucas, Templeton, Mass. Method of securing the seats and backs of chairs, sofas, &c.....	June 23, 1870
103,542	Baker, Moses O., New York, N. Y. Lock.....	May 31, 1870
102,355	Baker, Philander, Chicago, Ill. Lamp-burner.....	April 26, 1870
110,188	Same..... Lamp-wick.....	Dec. 23, 1870
103,122	Baker, Robert Breckenridge, Philadelphia, Pa. Insulator for telegraph wire...	May 7, 1870
104,097	Baker, Sanford J., Madison Centre, Me. Horse-shoe.....	June 14, 1870
107,648	Baker, S. William, Austin, Texas. Truss.....	Sept. 27, 1870
100,711	Baker, Timothy, St. John's, Mich. Churn.....	Mar. 15, 1870
106,766	Baker, Vincent M., Preston, Minn. Water-wheel.....	Aug. 30, 1870
105,885	Baker, Virginia L., Richmond, Va. Bedstead and cot.....	Aug. 2, 1870
105,886	Baker, William C., New York, N. Y. Steam-heater.....	Aug. 2, 1870
104,098	Baker, William Rondeau, Trempealeau, Wis. Car-coupling.....	June 14, 1870
	Baker, William R., and L. J. McCormick. (See McCormick & Baker, assignors.)	
	Same..... same.	
	Baker, William R., et al. (See McCormick, Baker & Erpelding, assignors.)	
	Baker, Winslow. (See Hankenson, James W., assignor.)	
	Baker, Winslow, and James W. Hankenson. (See Hankenson & Baker.)	
	Bakewell, Pears & Co. (See Kirchner, William M., assignor)..... (Design.)	
99,282	Baleh, Edward T., Philadelphia, Pa. Sun-shade for horses. (Antedated January 20, 1870).....	Feb. 1, 1870
100,585	Balding, Anson, Wheeling, W. Va. Expandible core for casting iron, glass, &c.	Mar. 8, 1870
104,688	Same..... Pump.....	June 23, 1870
103,123	Baldwin, Augustine, New York, N. Y. Steam cotton-press.....	May 17, 1870
108,551	Baldwin, Charles N., Willington, Conn. Horse hay-fork.....	Oct. 25, 1870
108,552	Same..... Boring-machine.....	Oct. 25, 1870
3,895	Baldwin, Charles S., New York, N. Y. Artificial flowers..... (Design)...	Mar. 15, 1870
99,049	Baldwin, Cyrus W., Boston, Mass. Elevator for hoisting human beings, merchandise, &c.....	Jan. 25, 1870
109,169	Same..... Elevator.....	Nov. 15, 1870
106,767	Baldwin, Frederick, Janesville, Wis. Wood-turning lathe.....	Aug. 30, 1870
102,750	Baldwin, George G., Milford, Conn. Earth chamber-vessel.....	May 10, 1870
107,150	Baldwin, James S., assignor to Charles F. Ritchel, Newark, N. J. Method of inlaying wood, &c.....	Sept. 6, 1870
103,124	Baldwin, John B., assignor to self and the Miles Alarm-Till Manufacturing Company, Nashua, N. H. Alarm-till.....	May 17, 1870
99,812	Baldwin, J. W., Laconia, N. H. Globe-valve.....	Feb. 15, 1870
101,413	Baldwin, Silas D., Chicago, Ill. Vapor-burner.....	April 5, 1870
105,625	Baldwin, William W., Cleveland, Ohio. Telegraph-insulator.....	July 26, 1870
107,214	Baldy, James B., and Charles C. Warren. (See Warren & Baldy.) (Two cases.)	
107,214	Bales, Moses and William P., London, Ohio. Harvester.....	Sept. 13, 1870
101,970	Balfour, M. G., assignor to self and B. Borman, Manson, Wis. Roofing material.	April 19, 1870
105,411	Ball, Albert, Canton, Ohio. Iron running-gear.....	July 19, 1870
	Ball, Charles E. (See Brown, J. Hamilton, assignor.)	
110,107	Ball, Ephraim, jr., Canton, Ohio. Wagon.....	Dec. 13, 1870
109,570	Ball, Hiram J., Oswego, N. Y. Rubber cement. (Antedated Nov. 19, 1870).....	Nov. 29, 1870
103,825	Ball, Hosea, New York, N. Y. Ore-separator.....	June 7, 1870
4,026	Same..... Oven..... (Reissue).....	June 14, 1870
105,541	Same..... same.....	July 19, 1870
	Same..... same..... (Extension).....	Sept. 19, 1870
109,711	Same..... Grate-bar.....	Nov. 29, 1870
106,451	Ball, James, assignor to self and Samuel Raynor & Co., New York, N. Y. Manufacturing envelopes.....	Aug. 16, 1870
109,372	Ball, Phinehas, and Benaiah Fitts, Worcester, Mass. Liquid-meter.....	Nov. 22, 1870
104,689	Ball, Richard, Petersburg, Va. Hay and cotton-press.....	June 23, 1870
	Ball, R. & Co. (See Clark, Milton W., assignor)..... (Three cases.)	
98,482	Ball, Silas R., Hyde Park, Ill. Gas-machine.....	Jan. 4, 1870
	Ball, Thomas W. (See Winter, Henry, assignor.)	
98,839	Ball, William, Chicopee, Mass. Forging and stamping machine.....	Jan. 18, 1870
106,107	Ball, William, Oregon, Mo. Animal-trap.....	Aug. 9, 1870
	Ball, William, deceased, by Adelia E. and Edwin P. Ball, administrators, Chicopee, Mass. Operating steam-stamp..... (Extension).....	May 24, 1870
107,325	Ball, William H., and Thomas Barnard, Newark, N. J. Braeet.....	Sept. 13, 1870
102,197	Ballantine, Alexander T., assignor to self, W. W. Kingsland, N. R. Bates, and D. D. Phelps, Titusville, Pa. Door-spring.....	April 19, 1870
108,313	Ballard, Andrew J., Cohoes, New York. Dumping-car.....	Oct. 18, 1870
107,326	Ballard, John A., Bombay, India. Steering apparatus for torpedo boats, &c....	Sept. 13, 1870
104,099	Ballard, William, Caroline, N. Y. Spark-arrester.....	June 14, 1870
	Ballard, William, and Jay M. Crosby. (See Crosby & Ballard.)	
99,391	Ballard, William W., Elmira, N. Y. Wood pavement.....	Feb. 1, 1870
105,292	Same..... same.....	July 12, 1870
4,419	Ballinger, Charles, assignor to McKee and Brothers, Pittsburg, Pa. Ornamentation of glass-ware..... (Design).....	Oct. 18, 1870
102,205	Balnain, William Henry, Great Britain. Concentrating oil of vitriol.....	April 26, 1870
102,206	Same..... Mode of storing and transporting oil of vitriol.....	April 26, 1870
110,189	Balnain, William Henry, assignor through mesne assignments to George T. Lewis, Great Britain. Packing caustic alkali.....	Dec. 20, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,621	Balsley, John H., Dayton, Ohio. Step-ladder.....	Feb. 8, 1870
99,622	Same..... Bracket-hinge for step-ladder.....	Feb. 8, 1870
101,414	Balsley, Joseph, Bedford, Ind. Washing-machine.....	April 5, 1870
103,826	Bancroft, C. R., assignor to C. C. Dickerman and C. W. Munroe, Boston, Mass. Letter-box.....	June 7, 1870
103,410	Bancroft, James R., and Robert C. Bache, Philadelphia, Pa. Carpet-stretcher and tacker.....	May 24, 1870
101,700	Bancroft, John A., assignor to L. F. Bancroft and Andrew B. Yetter, Worcester, Mass. Street-sprinkler.....	April 12, 1870
3,917	Bancroft, Joseph B., and William F. Draper. (See Draper and Bancroft.) Bancroft, L. F., assignor to self and Andrew B. Yetter, Worcester, Mass. Street-sprinkler..... (Reissue).....	April 12, 1870
107,215	Bancroft, Melvin, assignor to George F. Richardson & Co., Montague, Mass. Extension-table.....	Sept. 13, 1870
	Bancroft, Nathan W., and Prentiss J. Kent. (See Kent & Bancroft, assignors.) Banes, Thomas, et al. (See Gerhardt, William, assignor.)	
103,961	Bangle, Amos A., Brooklyn, Cal. Printing-press.....	June 7, 1870
99,623	Bangs, Elijah, Provincetown, Mass. Chain-shackle.....	Feb. 8, 1870
99,045	Banigan, Joseph, and George W. Miller, Smithfield, R. I. Molds for vulcanizing rubber pencil tips.....	Jan. 18, 1870
107,151	Banker, Charles S., and Alexander Purdy, Hector, N. Y. Washing-machine.....	Sept. 6, 1870
99,813	Banks, C. M., Philadelphia, Pa. Spring for railway cars.....	Feb. 15, 1870
	Banks, Jeremiah H., et al. (See Cranston, Banks & Ingersoll.) Baunon, Charles, W. (See Smith, Gibson, assignor.)	
107,852	Banta, William E., assignor to self and Buckley A. Rose, Springfield, Ohio. Diaphragm stop-cock.....	Oct. 4, 1870
	Banzett, William, et al. (See Snedicker, Luke S., assignor.) Barackman, B. P., Linesville, Pa. Hay-crane or carrier.....	Feb. 8, 1870
99,520	Baranger, Henry, assignor to self and James P. Bradley, St. Louis, Mo. Fare-box for passenger cars. (Antedated June 16, 1870).....	June 28, 1870
104,816	Barb, David. (See Heffley, William H., assignor.)	
3,892	Barbarin, Arthur, New Orleans, La. Apparatus for carbureting air and gas. Reissue.....	Mar. 22, 1870
	Barbarin, Arthur, and Antonie E. Dupas. (See Dupas and Barbarin.) Barber, B. J. Ballston Spa, N. Y. Cutter-head for planing-machine.....	April 12, 1870
101,701	Same..... Water-wheel.....	Nov. 8, 1870
109,099	Barber, Henry B., Scott, N. Y. Gun-sight.....	April 5, 1870
101,568	Barber, James D. (See Martin, William E., assignor.)	
98,544	Barber, Sylvester D., and James Wolf, assignors to said Barber and Hiram Cox, Mattoon, Ill. Bee-hive.....	Jan. 4, 1870
106,535	Barber, Vincent S., assignor to Nixon & Co., Alliance, Ohio. Harvester.....	Aug. 23, 1870
98,692	Barbour, J. W., Winooski Falls, Vt. Rag-cutter.....	Jan. 11, 1870
107,751	Barboun, Joseph W., assignor to self and William Earl, Winooski Falls, Vt. Feeding-device for carding-machines.....	Sept. 27, 1870
108,091	Barboun, Joseph W., assignor to self and Elisha Allen, Winooski Falls, Vt. Shears for cutting flowers.....	Oct. 11, 1870
105,626	Barbour, Nelson H., New York, N. Y. Steam-generator. (Antedated July 19, 1870).....	July 26, 1870
106,452	Barclay, Andrew, North Britain. Ejector and steam-condenser.....	Aug. 16, 1870
107,588	Barclay, John, Bergen, N. J. Bracelet.....	Sept. 20, 1870
4,192	Same..... Manufacture of plated-metal bracelets..... (Reissue).....	Dec. 6, 1870
99,748	Bard, James I., New Orleans, La. Fireplace-back.....	Feb. 15, 1870
99,521	Barden, John S., Providence, R. I. Pump.....	Feb. 8, 1870
	Barfield, Ira, and Jasper Newton. (See Newton & Barfield.) Barker, Abel, Wyoming, Pa. Can-opener.....	May 17, 1870
103,125	Barker, Charles, assignor to self and T. C. Thomas, Knox County, Ill. Door for railway box-car.....	May 17, 1870
103,126	Barker, Cyrus I., and Roscoe C. Reynolds. (See Reynolds & Barker.)	
105,768	Barker, John F., Springfield, Mass. Gas-burner.....	July 26, 1870
102,474	Barker, Joseph, assignor to self and Philip Myers, Chicago, Ill. Sand-paper holder.....	May 3, 1870
106,536	Barker, Joseph, assignor to self and Philip Myers, Chicago, Ill. Machine for sand-paper molding.....	Aug. 23, 1870
100,967	Barker, Osborne, Brooklyn, N. Y. Instrument for dosing animals.....	Mar. 22, 1870
107,752	Barker, Silas, and Henry S. Pratt, Hartford, Conn. Rolled sheet-iron.....	Sept. 27, 1870
	Barker, Stephen A. (See Capen, George O., assignor.) Barker, Stephen A., assignor to New England Toy Company, Providence, R. I. Cap for coffin-nails.....	Jan. 11, 1870
103,543	Barker, Volney, Otisfield, Me. Green-corn cutter.....	May 31, 1870
108,954	Barker, William C., Ypsilanti, Mich. Pump.....	Nov. 8, 1870
109,998	Barker, William Henry, Windsor, Nova Scotia. Cat-head anchor-stopper.....	Dec. 13, 1870
107,589	Barks, Ephraim, and Lucius H. Emmons, Noblesville, Ind. Latch for gates.....	Sept. 20, 1870
3,878	Barlow, Ashbell P., assignor to self, C. H. Eastman, W. W. King, Z. B. Small, and James H. Johnson, Claremont, N. H. Saw-mill..... (Reissue).....	Mar. 15, 1870
102,208	Barlow, Charles B., Portsmouth, N. H. Chimney-cowl.....	April 26, 1870
101,702	Barlow, Jesse, Vanmeter, Iowa. Truck for moving buildings.....	April 12, 1870
100,104	Barnard, A. B., Worcester, Mass. Horse hay-rake.....	Feb. 22, 1870
	Barnard, Elisha J., et al. (See Clark, Hezekiah M., assignor.) Barnard, Thomas, and William H. Ball. (See Ball & Barnard.)	
98,840	Barnard, William B., Waterville, Conn. Sheep-shears.....	Jan. 18, 1870
106,649	Barnard, William B. and Andrew J., Waterville, Conn. Manufacture of shears.....	Aug. 23, 1870
104,100	Barnekov, Kiel V., Cornwall, N. Y. Breech-loading fire-arm.....	June 14, 1870

*Alphabetical list of patentees for the year 1870—Continued*

No.	Name, residence, and invention or discovery.	Date.
101,971	Barnes, Alden, Bloomington, Ill. Hay-derrick.....	April 19, 1870
	Barnes, Chauncey, <i>et al.</i> (See Valentine, Jacob, <i>et al.</i> )	
107,590	Barnes, Joseph E., Danvers Center, Mass., and Lucius P. Barnes, Fitchburg, Mass. Permutation-lock.....	Sept. 20, 1870
106,307	Barnes, Merrick M., North Adams, Mass. Sewing-machine.....	Aug. 16, 1870
105,542	Barnes, Newcomb M., Tiffin, Ohio. Horse hay-rake.....	July 19, 1870
105,627	Barnes, William F., assignor to self and Susan H. Clark, Rockford, Ill. Machinery for cutting wax into sheets.....	July 26, 1870
100,490	Barnett, Lewis, assignor to self and James D. Boal, Leechburg, Pa. Boot-laster.....	Mar. 8, 1870
107,435	Barney, George, Swanton, Vt., and Valentine G. Barney, Minneapolis, Minn. Machine for dressing tiles.....	Sept. 20, 1870
	Barney, Gilbert R. (See Kendall, Fernando C., assignor.)	
106,108	Barns, Charles, West Liberty, Iowa. Rake-attachment for harvesters.....	Aug. 9, 1870
101,081	Barnstead, James T., Peabody, Mass. Machine for scraping leather.....	Mar. 22, 1870
103,827	Barnum, John D., Amenia Union, N. Y. Removable calk for horseshoes.....	June 7, 1870
105,628	Barnum, Nelson, La Porte, Ind. Needle-threader.....	July 26, 1870
	Barnum, Theodore. (See Alger, Darius, assignor.)	
108,430	Baron, Charles S. and Alfred L., Bellaire, Ohio. Lantern.....	Oct. 18, 1870
100,842	Baron, Joseph, Millbury, Mass. Belt-shipping mechanism for spinning-jacks.....	Mar. 15, 1870
100,251	Barr, J. H., Mansfield, Ohio. Wagon.....	Mar. 1, 1870
105,293	Barr, John H., and Jacob H. Smith, Roanoke, Ind. Dough-kneader.....	July 12, 1870
101,972	Barr, Orlando, Beloit, Wis. Ventilator.....	April 19, 1870
103,411	Barr, William H., Monterey, Ky. Liniment.....	May 24, 1870
108,955	Barr, William M., Williamsport, Pa. Gearing for metal-planers.....	Nov. 8, 1870
110,538	Barrell, Thomas A., assignor to self and William H. Austin, Maroa, Ill. Portable store-room and pantry.....	Dec. 27, 1870
108,092	Barrett, Harry, Brooklyn, N. Y. Buffing apparatus for finishing spoons.....	Oct. 11, 1870
	Barrett, J. B. (See Hedrick, James H., assignor.)	
	Barrett, John R. (See Emerson, George W., assignor.)	
102,475	Barrie, John D., Lawrence, Mass. Device for attaching picker to picker-staff.....	May 3, 1870
109,373	Barrie, Samuel S., Green Point, N. Y. Wooden hoop-box.....	Nov. 22, 1870
108,431	Barron, Charles, Lafayette, Ind. Clothes-line operator.....	Oct. 18, 1870
110,420	Barron, George A., Pembroke, Me. Coffee-pot strainer.....	Dec. 27, 1870
3,920	Barron, Thomas J., assignor to The Barrons' Patent-Steel Manufacturing Company, New York, N. Y. Converting iron into steel..... (Reissue).....	April 12, 1870
104,409	Barrows, Charles H., Willimantic, Conn. Three-wheeled carriage.....	June 21, 1870
103,280	Barrows, Thomas, assignor to self and G. Purrington, jr., Brooklyn, N. Y. Filter.....	May 24, 1870
4,535	Barry, James S. and Alfred M., Albion, Mich. Fruit-gatherer..... (Design).....	Dec. 27, 1870
107,649	Barry, William M., Nashville, Tenn. Metallic-roof.....	Sept. 27, 1870
	Barry, William U. (See Keeffer, Goveneur M., assignor.)	
108,314	Bartels, Emil, New York, N. Y. Folding-chair.....	Oct. 18, 1870
108,750	Same..... Reclining-chair.....	Nov. 1, 1870
99,814	Barth, Gottlieb M., Philadelphia, Pa. Rotary window-washer.....	Feb. 15, 1870
99,133	Barth, Henry, Cincinnati, Ohio. Sheet-gauge for printing-presses.....	Jan. 25, 1870
99,749	Same..... Gripper and gauge for printing-presses.....	Feb. 15, 1870
100,002	Same..... Printing-press.....	Feb. 22, 1870
101,703	Same..... Inking-apparatus.....	April 12, 1870
108,432	Bartholf, Abraham, New York, N. Y. Apparatus for carburetting air and gas.....	Oct. 18, 1870
100,352	Bartholomay, Henry, assignor to Bartholomay & Frauenberger, Rochester, N. Y. Method of preserving the aromatic principle of hops.....	Mar. 1, 1870
103,281	Bartholomew, Harry S., Bristol, Conn. Bit-stock.....	May 24, 1870
	Bartholomew, John C., and Thomas E. Chandler. (See Chandler & Bartholomew, assignors.)	
101,211	Bartholomew, Thomas W., New York, N. Y. Suspender.....	Mar. 29, 1870
100,712	Bartholomew, William N., Newton Centre, Mass. Slate-frame.....	Mar. 15, 1870
3,810	Bartholomew, William N., assignor to J. Reckendorfer, Newton Centre, Mass. Rubber-eraser..... (Design).....	Jan. 4, 1870
101,344	Same..... Pencil-case.....	Mar. 29, 1870
	Bartle, Warren S., Newark, N. J. Machine for sowing fertilizers (Extension).....	April 7, 1870
107,650	Bartlett, Abel H., Spuyten Duyvil, N. Y. Hemmer for sewing-machines.....	Sept. 27, 1870
100,353	Bartlett, Eayres O., Birmingham, Pa. Manufacture of dry white-lead.....	Mar. 1, 1870
108,433	Same..... Treating the ores of lead and zinc for the manufacture of pigments, &c.....	Oct. 18, 1870
103,282	Bartlett, Elbridge G. W., Providence, R. I. Clothes-wringer.....	May 24, 1870
108,674	Same..... Wringing-machine.....	Oct. 25, 1870
100,234	Bartlett, H. A., Philadelphia, Pa. Cap for powder-boxes used for domestic purposes.....	Feb. 22, 1870
106,453	Bartlett, Henry F., La Grange, Mo. Churn-dasher.....	Aug. 16, 1870
108,956	Bartlett, James S., Warsaw, N. Y. Head-rest.....	Nov. 8, 1870
107,853	Bartlett, John L., assignor of one-half interest to William Riven, Stockton, Cal. Gas-carburetter.....	Oct. 4, 1870
103,828	Bartlett, Joseph W., New York, N. Y. Lantern for streets.....	June 7, 1870
102,751	Bartlett, Otis B. and George E., Lewiston, Me. Stove-pipe attachment.....	May 10, 1870
106,454	Bartlett, Samuel R., Chicago, Ill. Automatic lubricating-sleeve.....	Aug. 16, 1870
106,455	Bartlett, William, Little Hocking, Ohio. Fence.....	Aug. 16, 1870
101,082	Bartlett, William D., Amesbury, Mass. Heating-furnace.....	Mar. 22, 1870
104,538	Bartlett, William W., Portland, Me. Spring bed-bottom..... (Reissue).....	June 21, 1870
4,046	Barto, Elias, Tiffin, Ohio. Corn-marker, planter, and cultivator..... (Reissue).....	June 28, 1870
99,750	Barton, Charles, assignor to Dexter, Lambert & Co., Paterson, N. J. Frame for dyeing in various colors for the manufacture of Scotch plaids, &c.....	Feb. 15, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,539	Barton, Charles C., Rochester, N. Y. Drawing-knife .....	June 21, 1870
101,345	Barton, George S., Worcester, Mass. Bearings for the table-rolls of Fourdrinier paper-machines .....	Mar. 29, 1870
	Barton, Jason, deceased, by Margarette L. Barton and Charles A. Buell, administrators, Chatham, Conn. Pressure-bell. (Extension.) .....	April 4, 1870
101,212	Barton, S. Thompson, and John W. Affron, New Orleans, La. Hasp for trunks, &c. (Antedated March 21, 1870) .....	Mar. 29, 1870
104,690	Barton, William E., East Hampton, Conn. Sleigh-bell .....	June 23, 1870
105,412	Same..... Mode of attaching sleigh-bells .....	July 19, 1870
106,456	Same..... Mode of attaching sleigh-bells to straps .....	Aug. 16, 1870
4,185	Same..... Attaching sleigh-bells to straps .....	Nov. 29, 1870
104,247	Bartram, Walker B., Danbury, Conn. Sewing-machine .....	June 14, 1870
	Bascombe, John P., and John W. Stevens. (See Stevens & Bascombe.) .....	
106,912	Bashor, Benjamin S., Carter's Depot, Tenn. Machine for packing flour .....	Aug. 30, 1870
104,817	Bashor, William, Johnson City, Tenn. Machine for packing flour, &c. ....	June 23, 1870
100,704	Bashore, Henry H., Philadelphia, Pa. Dovetailing-machine .....	Mar. 8, 1870
101,569	Basnett, Elzy L., Morgantown, W. Va. Harness .....	April 5, 1870
100,526	Bass, E. W. H., Quincy, Mass. Moustache-guard for drinking vessels .....	Mar. 8, 1870
103,829	Bassett, Chauncey, Kewanee, Ill. Type-cabinet .....	June 7, 1870
	Bassett, George W., et al. (See Egge, Frederick, assignor. Reissue.) .....	
105,887	Bassett, Greenleaf, Taunton, Mass. Mold for casting mackerel-jigs .....	Aug. 2, 1870
106,763	Bassett, Marshall L., assignor to self and Leonard H. Burt, West Haven, Conn. Shaft-coupling .....	Aug. 30, 1870
105,888	Bassler, John, Galesburg, Ill. Sliding-door for railway box-car .....	Aug. 2, 1870
105,163	Bastion, Joseph, Canton, N. Y. Water-wheel .....	July 12, 1870
110,108	Basye, Hedgemon T., Dyersburg, Tenn. Preserving sweet-potatoes .....	Dec. 13, 1870
3,970	Batchelder, Asabel G., Lowell, Mass. Apple-parer .....	May 17, 1870
103,830	Same..... Machine for paring fruit and vegetables .....	June 7, 1870
109,286	Same..... Pencil-sharpener .....	Nov. 8, 1870
103,962	Batchelder, Jesse S., Fort Wayne, Ind. Candy-machine .....	June 7, 1870
103,831	Batchelder, William W., Boston, Mass. Apparatus for lighting gas by electricity .....	June 7, 1870
103,127	Batchelder, William W., assignor to George Viles, Boston, Mass. Apparatus for lighting gas by electricity .....	May 17, 1870
101,704	Batcheller, Charles, Des Moines, Iowa. Fire-kindler .....	April 12, 1870
106,537	Same..... Polk County, Iowa. Motive-power .....	Aug. 23, 1870
106,769	Batcheller, Isaac G., Wallingford, Vt. Machine for bending forks .....	Aug. 30, 1870
106,913	Batchelor, Joseph M., Foxcroft, Me. Track-lifter .....	Aug. 30, 1870
110,190	Bate, Wallace H., East Somerville, Mass. Apparatus for generating carbonic acid .....	Dec. 20, 1870
110,334	Same..... Draught-cock .....	Dec. 20, 1870
	Bate, Wallace H., and Matthew Scrannage. (See Scrannage & Bate.) .....	
106,308	Bateman, Charles, Baltimore, Md. Stone-sawing machine .....	Aug. 16, 1870
109,286	Bateman, Samuel, France. Paddle-wheel .....	Nov. 15, 1870
	Bateman, Samuel F., et al. (See Garlinghouse, assignor.) .....	
101,415	Bates, Benjamin, Baltimore, Md. Apparatus for generating carbonic acid .....	April 5, 1870
110,421	Same..... Bottle-fastening .....	Dec. 27, 1870
105,769	Bates, Caleb, Kingston, Mass. Apparatus for immersing shingles and other articles in liquids .....	July 26, 1870
	Bates, Charles H., et al. (See Perrot, Perrot & Bates.) .....	
106,650	Bates, Daniel L., Dayton, Ohio. Stove-leg .....	Aug. 23, 1870
	Bates, Frank Atwill, and Mack Delorimer Converse. (See Converse & Bates.) .....	
107,591	Bates, Joseph W. and Mary Ann, St. Paul, Minn. Wash-boiler .....	Sept. 20, 1870
98,833	Bates, Norman R., Titusville, Pa. Flexible joint for tubes .....	Jan. 11, 1870
	Bates, N. R., et al. (See Ballentyne, Alexander T., assignor.) .....	
102,476	Bates, Thomas, New Mexico. Ore-separator .....	May 3, 1870
	Bates, Thomas L. (See Witsil, George L., assignor.) .....	
104,818	Bates, William and Frederick, England. Machine for scouring and washing fabrics. (Patented in England Dec. 14, 1867) .....	June 23, 1870
104,819	Same..... Fulling-mill. (Patented in England March 16, 1866) .....	June 23, 1870
105,889	Battersby, William A., Brooklyn, N. Y. Manufacture of artificial stone .....	Aug. 2, 1870
108,957	Battersby, William Augustus, assignor to self, Timothy R. Crawford, Robert Brown, and John Anderson, Williamsburg, N. Y. Compound for pipes, tiles, sidewalks, &c. ....	Nov. 8, 1870
99,050	Battle, Marcus L., Bainbridge, Ga. Instrument for plugging teeth .....	Jan. 25, 1870
103,412	Battles, Lucretia, Gloucester, Mass. Parasol .....	May 24, 1870
103,232	Bauder, Silas E., Birmingham, Ohio. Churn-dasher .....	Oct. 11, 1870
	Bauer, George W., and John O. Kopas. (See Kopas & Bauer.) .....	
4,174	Bauer, Jacob C., New York, N. Y. Paper-box .....	June 23, 1870
108,315	Same..... Combined collar and cuff box .....	Oct. 18, 1870
102,648	Baugh, Edwin Pugh, Philadelphia, Pa. Drying guano .....	May 3, 1870
103,832	Baughman, David C., Tiffin, Ohio. Thrashing-machine .....	June 7, 1870
105,770	Baun, Albert B., Grantsville, Pa. Combined harrow and shovel cultivator .....	July 26, 1870
106,770	Baum, John E., Philadelphia, Pa. Curtain-cord tightener .....	Aug. 30, 1870
99,522	Baum, William, Hoboken, N. J. Flooring .....	Feb. 8, 1870
107,996	Bauman, Herman, and Urban Mueller, Canton, Ohio. Clothes-rack .....	Oct. 4, 1870
109,354	Bauman, Christoph August, New York, N. Y. Covering for steam-boilers .....	Mar. 1, 1870
103,963	Bauman, F., and George F. Letz, Chicago, Ill. Fire-proof ceiling .....	June 7, 1870
100,355	Baumgarten, Fredrick, Brooklyn, N. Y. Fastening for carriage curtains .....	Mar. 1, 1870
99,624	Baur, Julius, New York, N. Y. Manufacture of steel .....	Feb. 8, 1870
108,751	Bauschtlker, Frederick, assignor to self and Frederick Gentner, Washington, D. C. Combined hydrant and fire-plug .....	Nov. 1, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,093	Bausman, Abner, Minneapolis, Minn. Potato-digger.....	Oct. 11, 1870
102,079	Baxter, Albert, Howard, N. Y. Wheel-gear for carriages.....	April 19, 1870
	Baxter, Uri J., and Ephraim K. Elliott. (See Elliott & Baxter.)	
	Baxter, William, Newark, N. J. Wrench..... (Extension)...	Feb. 11, 1870
104,820	Baxter, William, assignor to William D. Russell and Peter T. Speer, Newark, N. J. Steam-generator.....	June 23, 1870
	Bayley, Charles E. (See McKay, William, assignor.)	
101,083	Bayley, William, Baltimore, Md. Adjustable bearing for water-wheel shafts...	Mar. 22, 1870
101,084	Bayley, William, and A. B. Crowell, Baltimore, Md. Turbine water-wheel.....	Mar. 22, 1870
	Baylies, Thomas L., and Edwin Crawley. (See Crawley & Baylies.) (Two cases.)	
101,085	Baylor, Charles G., Quincy, Mass. Vegetable-roaster.....	Mar. 22, 1870
100,587	Baylor, C. G., Quincy, assignor to Edward S. Tobey, Richard and Charles Soule, Boston, and Louisa D. Baylor, Quincy, Mass. Compound to be used as an article of diet.....	Mar. 8, 1870
108,233	Bazin, Ernest, France. Apparatus for spinning hemp, flax, and other fibrous substances.....	Oct. 11, 1870
	Beach, Burroughs, and Woreu B. Field. (See Field & Beach.)	
108,958	Beach, Darwin, Oshkosh, Wis. Spark catcher and consumer.....	Nov. 8, 1870
	Beach, Dennis. (See Chapman, Frank G., assignor)..... (Four cases.)	
107,854	Beach, Henry H., Rome, N. Y. Process of seasoning lumber.....	Oct. 4, 1870
102,907	Beach, Lurandus and Lurandus L., jr., Lawrence, Mass. Machine for cutting, stamping, and packing soap.....	May 10, 1870
104,248	Beach, Sylvester W., South Bend, Ind. Shifting carriage or buggy seat.....	June 14, 1870
109,102	Same..... Ypsilanti, Mich. Clamping movable seats for carriages.....	Nov. 8, 1870
	Beach, V. R., et al. (See Blood, Hathaway & Beach.)..... (Reissue.)	
109,287	Beach, William B. H., Naples, N. Y. Washing-machine.....	Nov. 15, 1870
104,091	Beach, William J., Nashville, Tenn. Railroad-car spittoon.....	June 23, 1870
103,544	Beagle, Henry, jr., Philadelphia, Pa. Nut-lock.....	May 31, 1870
109,572	Same..... Back-band hook.....	Nov. 29, 1870
108,752	Beal, Richard, Commerce, Mich. Curtain fixture.....	Nov. 1, 1870
104,540	Beales, Emanuel D., assignor to self and John Dages, Gallipolis, Ohio. Edge-iron for shoemakers.....	June 21, 1870
	Beaman, Elmer A., et al. (See Allen, Edwin F., assignor.)	
104,821	Bean, Charles, Providence, R. I. Lubricating journal.....	June 28, 1870
99,815	Bean, Charles, assignor of one-half interest to James Langley, jr., North Providence, R. I. Sash-holder.....	Feb. 15, 1870
110,422	Bean, Charles, assignor to Albert F. Allen, Providence, R. I. Coupling for shafting.....	Dec. 27, 1870
102,477	Bean, Charles, and Suel Logee, East Douglas, Mass. Washing-machine.....	May 3, 1870
108,434	Bean, Frank, assignor to Edwin E. Bean, Somerville, Mass. Apparatus for lighting and extinguishing gas by electricity.....	Oct. 18, 1870
109,288	Bean, John, Hudson, Mich. Filter.....	Nov. 15, 1870
108,435	Bean, Joseph H., Marietta, Ohio. Machine for cutting soles, &c., for boots and shoes.....	Oct. 18, 1870
101,213	Bean, Otis W., and W. B. Rowland, Tecumseh, Mich. Apparatus for tanning leather.....	Mar. 29, 1870
110,539	Beard, George N., St. Louis, Mo. Cotton-bale tie.....	Dec. 27, 1870
	Beard, George W., and Samuel B. Sexton. (See Sexton & Beard.)	
108,675	Beard, Henry J., assignor to self and James Hawes, jr., New Sharon, Me. Machine for felling trees.....	Oct. 25, 1870
108,436	Beardsley, Edwin R., Aroma, Ill. Turbine water-wheel. (Antedated Oct. 15, 1870).....	Oct. 18, 1870
109,374	Beardsley, George F., assignor to self and A. S. Parker, Oxford, N. Y. Sash-holder.....	Nov. 22, 1870
109,573	Beardsley, William L., Binghamton, N. Y. Spiral spring for bedsteads.....	Nov. 29, 1870
104,101	Bearse, Orin B., Hyannis, Mass. Hawse-pipe stopper.....	June 14, 1870
100,105	Beasley, Charles J., Petersburg, Va. Cotton-press.....	Feb. 22, 1870
100,106	Same..... Alarm-gun.....	Feb. 22, 1870
104,922	Same..... Hay and cotton press.....	July 5, 1870
109,485	Beattie, Robert A., Philadelphia, Pa. Varnish.....	Nov. 22, 1870
108,959	Beatty, James H., assignor to John Adams and Thaddens W. Brigham, Franklin, Pa. Sucker-rod coupling.....	Nov. 8, 1870
3,855	Beatty, John P., Norwalk, Conn. Hat..... (Reissue).....	Mar. 1, 1870
102,356	Beatty, Samuel, Norwalk, Conn. Perforated wire.....	April 26, 1870
103,703	Same..... Ventilator for hats.....	May 31, 1870
103,413	Beatty, William H., Columbus, Ohio. Mop-head.....	May 24, 1870
110,541	Beanmont, A. B., Austerlitz, Mich. Horse-yoke.....	Dec. 27, 1870
	Beaver Falls Cutlery Company. (See Nichols & Bower, assignors.)	
108,094	Bebout, Stewart, Waterford, Ohio. Horse hay-fork.....	Oct. 11, 1870
109,103	Bechtel, William H., Philadelphia, Pa. Steam-trap.....	Nov. 8, 1870
106,248	Bechtel, William H., Philadelphia, Pa. Shade-cord retainer.....	Aug. 9, 1870
4,480	Beck, Alexander, Philadelphia, Pa. Carpet-pattern..... (Design).....	Nov. 22, 1870
4,481	Same..... same..... (Design).....	Nov. 22, 1870
4,482	Same..... same..... (Design).....	Nov. 22, 1870
	Beck, Bernard J., and John C. Koch. (See Koch & Beck, assignors.)	
107,997	Beck, Frederick, New York, N. Y. Compound for coloring paper and other fabrics.....	Oct. 4, 1870
4,181	Same..... Compound for coloring and ornamenting paper and other fabrics and materials..... (Reissue).....	Nov. 22, 1870
109,486	Same..... Coating and ornamenting the surface of paper, cloth, &c.....	Nov. 22, 1870
110,540	Same..... Machine for drying paper and other fabrics.....	Dec. 27, 1870

Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
104,541	Beck, Frederick, and Henry M. Johnston. (See Johnston & Beck.)	
100,356	Beck, Jonas D., Liberty, Pa. Vise	June 21, 1870
110,423	Beck, Joseph, Morisania, N. Y. Velocipede. (Antedated Feb. 26, 1870).	Mar. 1, 1870
108,553	Beck, Theodore, Omaha, Neb. Medical bitters.	Dec. 27, 1870
99,051	Beck, William, New York, N. Y. Metallic fish-net, &c. (Antedated Oct. 12, 1870)	
99,134	Becker, Arthur Tappan, Cohoes, N. Y. Pocket-flask	Oct. 25, 1870
106,987	Becker, Charles, New York, N. Y. Umbrella	Jan. 25, 1870
	Becker, G. A., Seymour, Conn. Fountain-pen	Feb. 15, 1870
	Same. same	Jan. 25, 1870
	Becker, John C., and George H. Glad. (See Glad & Becker.)	Sept. 6, 1870
103,964	Becker, Peter, Mt. Vernon, N. Y. Flour-sifter	
103,545	Becker, Philip, South Bethlehem, Pa. Medical-compound	June 7, 1870
102,357	Becker, Samuel, and Peter Loucks, York, Pa. Car-mover	May 31, 1870
99,135	Beckers, Alexander, New York, N. Y. Revolving stereoscope	April 26, 1870
99,136	Same. same	Jan. 25, 1870
105,294	Beckett, Erasmus W., McConnellsville, Ohio. Circular-saw mill	Jan. 25, 1870
103,704	Beckett, William, Jamaica. Steam-plow	July 12, 1870
98,463	Beckley, Philip G., Newark, N. J. Child's chair and table	May 31, 1870
107,855	Beckwith, Alvin C., and George H. Graham, Oriskany, N. Y. Handle for milk-cans	Jan. 4, 1870
99,137	Beckwith, George Cyrus, Boston, Mass. Joiners' plane	Oct. 4, 1870
105,413	Beckwith, Leonard F. and Arthur, New York, N. Y. Cake-oven	Jan. 25, 1870
102,358	Beckwith, Nelson W., McDonough, N. Y. Washing-machine	July 19, 1870
108,316	Beckwith, Philo D., Dowagiac, Mich. Dome-top stove	April 26, 1870
100,713	Beckwith, Sanford, Oshkosh, Wis. Cultivator-teeth	Oct. 18, 1870
99,523	Beckwith, William L., Olmstead, Ohio. Window-stop	Mar. 15, 1870
101,570	Becraft, Aquila, Jacksonville, Ill. Gate	Feb. 8, 1870
101,086	Beddoe, James C., and John S. Coon, Branchport, N. Y. Cream-heater	April 5, 1870
103,123	Bedford, Alma, Coldwater, Mich. Harness-buckle	Mar. 22, 1870
98,909	Beels, William G., Independence, Iowa. Harvester-dropper	May 17, 1870
98,910	Same. same	Jan. 18, 1870
102,080	Beeman, Gain, Ironton, Ohio. Stove for railroad cars	Jan. 18, 1870
98,545	Beer, Carl, et al. (See Marli, Johan Jacob, assignor.)	April 19, 1870
102,359	Beer, Ludwig, New York, N. Y. Lock	
	Beers, Frederick W., New York, N. Y. Tank for raising sunken vessels	Jan. 4, 1870
	Beers, Ira S., et al. (See Holmes, Horace H., assignor.)	April 26, 1870
103,965	Beers, Nathan P., New York, N. Y. Copy-book	
103,129	Beers, William, Milan, Ohio. Wagon-seat attachment	June 7, 1870
98,734	Beers, William, and William Raynor, Milan, Ohio. Force-pump	May 17, 1870
108,960	Behc, Joseph, Carrolltown, Pa. Bee-hive	Jan. 11, 1870
102,209	Behm, John S., assignor to self and George Koehler, Elizabeth Township, Pa. Spring-guard	Nov. 8, 1870
4,088	Behr, Edward, assignor through his administrator, by mesne assignments, to Nathaniel Ladd, Brooklyn, N. Y. Mode of fastening skates (Reissue)	April 26, 1870
4,382	Behrens, W. H., and Jacob Suren. (See Suren & Behrens, assignors.)	Aug. 2, 1870
106,651	Beiderhase, Bernhard D., New York, N. Y. Spoon and fork handle (Design)	
109,712	Beidler, George A., Philadelphia, Pa. Wooden-pavement	Oct. 4, 1870
102,360	Beidler, Jacob H., Adrian, Mich. Ironing-board	Aug. 23, 1870
	Beiersdorf, Jacob, Chicago, Ill. Folding-lounge	Nov. 29, 1870
	Beigham, Hubbard H. (See Wheeler, Lorenzo D., assignor.)	April 26, 1870
	Beilstein, John F. (See Windsor, George W., assignor.)	
	Beitel, Calvin G. (See Bixler, Washington H., assignor.)	
	Beiter, Carl. (See Webendorfer, Rudolph, assignor.)	
109,104	Belbin, Charles T., Baltimore, Md. Oyster-dredge winder	
101,057	Belcher, Alva, Delhi, N. Y. Washing-machine	Nov. 8, 1870
	Belcher, B. B. (See Gale, Warren, assignor)	Mar. 22, 1870
	Belcher, George W., et al. (See Berry, William, assignor.)	
103,705	Belcher, Nathaniel, Boston, Mass. Scissors-sharpener	
107,753	Belding, Milo M., Brooklyn, N. Y. Show-case	May 31, 1870
104,923	Belding, Moses, Hartford, Conn. Instep-stretcher for boots and shoes	Sept. 27, 1870
105,027	Belfield, Henry, Philadelphia, Pa. Valve	July 5, 1870
	Belford, D. W. A. (See Griffith, Howard V., assignor.)	July 5, 1870
	Bell, Alonzo, et al. (See Perham, Augustus S., assignor.)	
	Bell, George C., et al. (See Mailer, Alexander, assignor.)	
	Bell, George H. (See Henderson, Frederick, assignor.)	
98,735	Bell, John B., Pittsburg, Pa. Machine for jointing barrel-staves	Jan. 11, 1870
106,988	Same. Stave-jointer. (Antedated Aug. 25, 1870)	Sept. 6, 1870
107,998	Bell, John H. (See Williams, Allison L., assignor.)	
99,751	Bell, Jonathan, New York, N. Y. Nut-lock	
	Bell, Joseph, Cincinnati, Ohio. Governor for steam and other enginery. (Antedated Jan. 29, 1870)	Oct. 4, 1870
4,458	Bell, Joseph I., Bell's Bridge, Cal. Buckle	
4,011	Bell, Robert W., Buffalo, N. Y. Trade-mark (Design)	Feb. 15, 1870
104,924	Bell, Thomas M., New York, N. Y. Milk-can bottom, &c. (Design)	Nov. 8, 1870
105,028	Bell, Van, Seville, Ohio. Bed-bottom	May 10, 1870
98,464	Bell, W. G., Pittsburg, Pa. Water-indicator for steam-generators. (Antedated Dec. 30, 1869)	July 5, 1870
103,283	Bell, William H., Spring Lake, Mich. Device for hitching horses	July 5, 1870
99,817	Bell, W. W., Chicago, Ill. Car-coupling	Jan. 4, 1870
4,023	Bellamy, John H., Charlestown, Mass. Clock-front	May 24, 1870
4,248	Same. Picture-frame	Feb. 15, 1870
		May 17, 1870
		July 19, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,249	Bellamy, John H., Charlestown, Mass. Hand-glass frame ..... (Design) ..	July 19, 1870
4,250	Same..... Bracket ..... (Design) ..	July 19, 1870
4,268	Same ..... same ..... (Design) ..	Aug. 2, 1870
4,299	Same..... Clock-front..... (Design) ..	Aug. 23, 1870
4,465	Bellamy, John H., assignor to Samtiel D. Niles and Benjamin A. Ward, Charles-town, Mass. Bracket ..... (Design) ..	Nov. 15, 1870
4,466	Same..... same ..... (Design) ..	Nov. 15, 1870.
4,375	Bellamy, John H., assignor of three-fourths interest to Samuel D. Niles and Benjamin A. Ward, Charlestown, Mass. Clock-front ..... (Design) ..	Oct. 4, 1870
101,973	Belleville, Julien F., France. Steam-generator. (Patented in England June 15, 1866) ..	April 19, 1870
101,314	Bellingier, Franklin, Lockport, N. Y. Pick-handle ..	Mar. 29, 1870
100,107	Bellman, Oscar, and John W. Garver, Hagerstown, Md. Hot-air furnace ..	Feb. 22, 1870
	Belmont Glass Works. (See Hipkins, Stephen, jr., assignor. .... (Design.)	
110,109	Belmont, Henry, England. Machine for tilling or cultivating ..	Dec. 13, 1870
103,966	Belson, Richard W., Philadelphia, Pa. Pattern for molding stove-plates.....	June 7, 1870
100,543	Belt, A., Newton, Iowa. Hedge-fence ..	Mar. 15, 1870
	Belt, George C., and Alonzo Sprague. (See Sprague & Belt.)	
104,249	Bement, Charles S., Southington, Conn. Machine for graduating squares, &c. .	June 14, 1870
108,676	Bemis, Sumner A., Albert E. Foth, and James W. Goodrich, Springfield, Mass. Paper-cuff ..	Oct. 25, 1870
103,317	Bender, Charles, Phenixville, Pa. Viaduct ..	Oct. 18, 1870
	Benedict & Burnham Manufacturing Company. (See Shelton, John H., assignor.)	
109,999	Benedict, Isaac A., West Springfield, Pa. Shovel-plow ..	Dec. 13, 1870
	Benham, Ovander J. (See Goodaire & Stead, assignors.)	
100,108	Benjamin, Christopher S., and Edward Story, Washington, Ill. Paint-brush ....	Feb. 22, 1870
105,771	Benjamin, John, Naples, N. Y. Bedstead-fastening ..	July 26, 1870
99,625	Benner, D. G., Holmesville, Ohio. Cultivator ..	Feb. 8, 1870
106,309	Bennet, Milton, Washington, D. C. Top-plate of cooking-stoves.....	Aug. 16, 1870
	Bennett, Alonzo H., and Ebenezer E. Sill. (See Sill & Bennett.)	
4,175	Bennett, Edwin, Baltimore, Md. Ornamentation of dishes..... (Design) ..	June 28, 1870
99,524	Bennett, George, New Pennington, Ind. Neck-yoke tug.....	Feb. 8, 1870
103,284	Bennett, George W., Harrodsburg, Ind. Apple parer, cutter, and corer ..	May 24, 1870
98,841	Bennett, Isaac C., Clinton, Ill. Gate ..	Jan. 18, 1870
103,414	Bennett, John C., and David N. Green, Coldwater, Mich. Elevator for building-material ..	May 24, 1870
	Bennett, Joseph, and Thomas Hydes. (See Hydes & Bennett.)	
105,890	Bennett, Joseph B., Brooklyn, assignor to self and Erastus S. Bennett, New York, N. Y. Ball-valve for injecting air ..	Aug. 2, 1870
105,029	Bennett, Morris L., Waverly, N. Y. Tuning-scale.....	July 5, 1870
101,416	Bennett, Oliver, Boston, Mass. Brick-kiln. (Antedated April 4, 1870) ..	April 5, 1870
108,863	Bennett, Silvester, assignor to Matthew Julius Bujac, Jefferson Parish, La. Apparatus for the manufacture of ice ..	Nov. 1, 1870
	Bennett, Thomas, and John Stokes. (See Stokes & Bennett.)	
109,574	Bennett, Walter, Springfield, Ill. Shuttle for sewing-machines ..	Nov. 29, 1870
110,424	Same..... Take-up mechanism for sewing-machines ..	Dec. 27, 1870
101,417	Bennett, Zelotes R., assignor to self and L. F. Reed, Williamsburg, N. Y. Tobacco-pipe ..	April 5, 1870
99,138	Bennor, Joseph, assignor to self and Abraham Rex, Philadelphia, Pa. Sewing-machine.....	Jan. 25, 1870
106,249	Same..... same ..	Aug. 9, 1870
	Bennor, Joseph, et al. (See Kitson, Lanning & Bennor, assignors.)	
110,335	Bennor, Joseph, assignor to self, John N. McLean, and Samuel Crawford, Philadelphia, Pa. Sewing-machine table ..	Dec. 20, 1870
99,818	Benson, Charles W., assignor of one-half interest to Richard C. Waters, Frederick, Md. Railway-car coupling ..	Feb. 15, 1870
108,961	Benson, George T., Jersey City, N. J. Hat and coat rack ..	Nov. 8, 1870
	Benson, Henry C., and Teile H. Muller. (See Muller & Benson) .. (Two cases.)	
	Benson, Robert R., et al. (See Delamarre, Charles, assignor.)	
105,295	Bent, Samuel S., Port Chester, N. Y. Grate-fender ..	July 12, 1870
105,296	Same..... Back for fire-place grate ..	July 12, 1870
105,297	Same..... Fire-place grate ..	July 12, 1870
4,275	Same..... Top-plate for mangers..... (Design) ..	Aug. 9, 1870
102,210	Bentley, George J., assignor to self and Edward Highfield, Michigan City, Ind. Hot-air drum for coal-stoves.....	April 26, 1870
	Bentley, Henry C. (See Schultz, Henry, assignor.)	
108,234	Bentley, Jeffrey O., and James Jackson, Philadelphia, Pa. Curling-iron ..	Oct. 11, 1870
100,714	Bentley, S., and Charles Mee, Detroit, Mich. Combination-lock ..	Mar. 15, 1870
109,863	Benton, Orville A., Amenia, N. Y. Hay-tedder ..	Dec. 6, 1870
98,911	Benton, R. O., Buffalo, N. Y. Plastic-roofing compound ..	Jan. 18, 1870
110,191	Benzing, J. Adani, jr., Oswego, N. Y. Smut-mill ..	Dec. 20, 1870
196,652	Ber, Michael, New York, N. Y. Jacket for heating-pipes ..	Aug. 23, 1870
107,651	Berbecker, Julius, New York, N. Y. Shutter-fastening ..	Sept. 27, 1870
101,418	Berdan, Hiram, assignor to Berdan Fire-Arms Manufacturing Company, New York, N. Y. Breech-loading fire-arm. (Antedated March 21, 1870) ..	April 5, 1870
109,869	Same..... Breech-loading fire-arm ..	Nov. 1, 1870
103,833	Berdan, Wilson A., Mooreville, Mich. Mill-bolt ..	June 7, 1870
109,105	Berecklemer, Charles P., Cincinnati, Ohio. Malt-kiln ..	Nov. 8, 1870
3,941	Berger, Henry, New York, N. Y. Bust .. (Design) ..	Mar. 29, 1870
3,947	Same..... Center-piece .. (Design) ..	April 5, 1870
103,546	Berger, William H., Danville, Pa. Workman's scaffold ..	May 31, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,626	Berg, Bror Folke, Boston, Mass. Vise-clamp .....	Feb. 8, 1870
101,571	Bergner, Georg, Washington, Mo. Pruning-shears .....	April 5, 1870
106,538	Same .....	Aug. 23, 1870
93,546	Bering, Thomas G., Harrisburg, Pa. Railway-rail chair .....	Jan. 4, 1870
101,215	Berkey, David, Huntington, Ind. Vapor-burner .....	Mar. 29, 1870
103,967	Berkstresser, George, assignor to self, P. W. Irvine, Jacob Reed, and R. W. Berkstresser, Bedford, Pa. Lamp-burner .....	June 7, 1870
99,393	Berlien, John, Chicago, Ill. Billiard-cushion .....	Feb. 1, 1870
104,542	Same .....	June 21, 1870
100,233	Bernd, Gustav and Adolph, Macon, Ga. Hook for harness .....	Feb. 22, 1870
105,414	Berney, James, and Thomas Marsh. (See Marsh & Berney)..... (Two cases.)	July 19, 1870
98,736	Bernstein, Adolph, St. Louis, Mo. Tobacco-box show-case .....	Jan. 11, 1870
102,211	Berolzheimer, Max E., New York, N. Y. Key-guard .....	April 26, 1870
190,844	Same..... Envelope fastener .....	Mar. 15, 1870
108,437	Berrey, William, assignor to self, George W. Belcher, and William G. McLeod, Boston, Mass. Detergent compound .....	Oct. 18, 1870
101,419	Berrie, William jr., Brooklyn, N. Y. Manufacture of oil-cloth .....	April 5, 1870
106,457	Berry, Charles H., East Somerville, Mass. Chamber-vessel .....	Aug. 16, 1870
109,575	Berry, Henry C., Wauseon, Ohio. Cooking-apparatus .....	Nov. 29, 1870
103,235	Berry, James, Buffalo, N. Y. Riveting-mandrel .....	May 24, 1870
107,327	Berry, John, San Francisco, Cal. Street-car truck .....	Sept. 13, 1870
107,328	Berry, Leander, assignor to self and Edward Burrell, Clyde, N. Y. Potato-digger .....	Sept. 13, 1870
104,102	Same..... Vine-puller for potato diggers, &c. ....	June 14, 1870
100,845	Berry, Plympton Ross, Youngstown, Ohio. Elevating-apparatus .....	Mar. 15, 1870
99,234	Berry, William J., Brooklyn, N. Y. Lantern .....	Jan. 25, 1870
99,996	Berryman, Robert Philadelphia, Pa. Low-water indicator and feed-water regulator .....	Feb. 15, 1870
109,796	Same..... Low-water indicator. (Antedated August 16, 1869) .....	Dec. 6, 1870
98,912	Same..... Boston, Mass. Valve-cock .....	Jan. 18, 1870
99,627	Bertolette, C. B., et al. (See Taylor, Robert R., assignor.)	Feb. 8, 1870
107,857	Bertsche, Leopold, Allegheny, Pa. Caster for furniture .....	Oct. 4, 1870
101,420	Beschke, William, Philadelphia, Pa. Packing for steam-engines, pumps, &c. ....	April 5, 1870
100,003	Beshler, Henry C., Berksburg, Pa. Corn-planter .....	Feb. 22, 1870
	Besse, H., Delaware, Ohio. Heating-stove .....	
	Bessemer, Henry, England. Process and apparatus for the manufacture of iron and steel. (Patented in England November 10, 1864) .....	
	Bessemer, Henry, et al. (See Ransome, Bessemer & Ransome.)	
106,771	Best, Benjamin. (See Kelly, Patrick, assignor)..... (Reissue.)	Aug. 30, 1870
104,250	Bestor, George C., Peoria, Ill. Fire-proof railway-car .....	June 14, 1870
	Bestor, Samuel J., assignor to Hamilton W. Cooklin, Hartford, Conn. Cigar-punch .....	Mar. 29, 1870
101,346	Betteley, Albert, Boston, Mass. Wood-pavement .....	Sept. 6, 1870
106,9-9	Same .....	Sept. 6, 1870
107,152	Same .....	Sept. 13, 1870
107,329	Betts, William, England. Machine for embossing capsules .....	May 3, 1870
102,478	Betts, William C., Brooklyn, N. Y. Ventilator for windows .....	June 21, 1870
104,543	Beucus, Abraham & Tennes, Waupun, Wis. Car-coupling .....	Feb. 1, 1870
99,392	Beugler, Edwin F., assignor to self and Gabriel S. Post, Williamsport, Pa. Tool for tonguing and grooving .....	Feb. 22, 1870
100,004	Beugler, Edwin F., and John Du Bois. (See Du Bois & Beugler.)	Feb. 22, 1870
107,330	Beugler, James M., Williamsport, Pa. Hanging-crank shaft .....	Sept. 13, 1870
107,652	Bevan, John, Hudson, N. Y. Car-starter .....	Sept. 27, 1870
100,005	Bever, John T., Lathrop, Mo. Washing-machine .....	Feb. 22, 1870
	Beylikgy, Marcar Wahram, New York, N. Y. Manufacture of water-proof fabrics from waste rubber .....	
99,525	Bibb, Bentley C. (See Klotz, Philip, assignor.)	Feb. 8, 1870
	Bibb, Bentley C., and Philip Klotz, assignors to Bentley C. Bibb, Baltimore, Md. Base-burning fire-place heater .....	June 14, 1870
104,251	Bilbee, Daniel, and William Rand, Letart Falls, Ohio. Potato-digger .....	May 17, 1870
103,207	Bibber, Benjamin F., Boston, Mass. Handle for boat-hooks, &c. ....	Oct. 4, 1870
107,999	Bickell, Elias, and Michael F. Norakon, Milton, Pa. Feather-renovator .....	April 19, 1870
102,031	Bickford, E. (See Gillet, Henry E., assignor.)	July 12, 1870
105,298	Bickford, Lyman, Macedon, N. Y. Grain-drill tooth .....	Mar. 1, 1870
100,357	Bicknell, Ira, Cincinnati, Ohio. Mode of securing carriage wheels on their axles. Bicknell, Joseph G., assignor to self, Cassander S. Wilkins, and George T. Jennings, Cambridge, Mass. Brake for carriages and wagons. ....	June 21, 1870
104,544	Biddle, Leopold, Knoxville, Iowa. Cane-mill .....	May 3, 1870
102,649	Biddlecom, Joab S., Macedon, N. Y. Clapboard-gauge .....	June 14, 1870
104,252	Bidwell, James, assignor to self and James McMeshan, San Francisco, Cal. Spring-hinge .....	May 31, 1870
103,706	Bidwell, Julius A., Chicago, Ill. Dental mallet .....	May 31, 1870
103,707	Same..... Artificial teeth .....	
	Bierce, Solomon N. (See Babbett & Binny, assignors.)	
98,659	Bierce, Solomon N. (See Binny, William W., assignor.)	Jan. 11, 1870
4,522	Biesenbach, P. J., Rochester, N. Y. Stove-pipe elbow .....	Dec. 20, 1870
99,819	Biesenbach, Peter J., Rochester, N. Y. Fruit-jar clamp .....	Feb. 15, 1870
	Bigard, H. H., E. H. Kellogg, and N. A. Prentiss, Fowler, N. Y. Churn. (Antedated Feb. 14, 1870) .....	
103,318	Bigelow, Edmund, Springfield, Mass. Liquid-cooler for cooling liquids under pressure .....	Oct. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,576	Bigelow, Edmund, Springfield, Mass. Chemical fire-extinguisher.....	Nov. 29, 1870
	Same..... (See Curtis, George, assignor) ..... (Two cases.)	
102,752	Bigelow, Elijah K., assignor to self and Peter Comstock, Litchfield, Mich. Pruning and hedge shears.....	May 10, 1870
101,088	Bigelow, Erastus B., Boston, Mass. Loom.....	Mar. 22, 1870
101,089	Same..... Machine for crushing ramie and other fibrous stalks.....	Mar. 22, 1870
103,415	Same..... Let-off mechanism for looms.....	May 24, 1870
110,000	Same..... Let-off and tension mechanism for power-looms.....	Dec. 13, 1870
	Bigelow, George B., trustee. (See Duchenin, William, assignor.)	
106,310	Bigelow, George B. (See Duchenin, William, assignor.)	
105,030	Bigelow, Hiram, Skowhegan, Me. Chisel for cutting gains.....	Aug. 16, 1870
108,677	Bigelow, Horace H., Worcester, Mass. Heel-press.....	July 5, 1870
108,678	Same..... Machine for heeling boots and shoes.....	Oct. 25, 1870
108,870	Same..... Machine for finishing heels on boots and shoes.....	Oct. 25, 1870
3,821	Same..... Heel for boots and shoes.....	Nov. 1, 1870
101,813	Bigelow, J. H., Worcester, Mass. Corn-hopper..... (Reissue).....	Feb. 8, 1870
	Same..... Stand for tea and coffee pots.....	April 12, 1870
	Bigelow, Oliver E. (See Hawkes, Allen, assignor.)	
104,692	Billarz, Candidus, Pittsylvania Court-House, Va. Stump-extractor.....	June 28, 1870
102,336	Billing, James O., Haleyon Dale, Ga. Plow.....	Dec. 20, 1870
102,479	Billmeyer, Joseph H., Raisin, Mich. Potato-digger.....	May 3, 1870
100,109	Bingham, E. B., Newark, N. J. Manufacture of paper.....	Feb. 22, 1870
3,890	Bingham, O. A., assignor to George C. Winchester, Gardner, Mass. Chair-seat. (Reissue).....	Mar. 22, 1870
101,080	Bingham, O. A., assignor to George C. Winchester, Cavendish, Vt. Chair-seat.....	Mar. 22, 1870
102,212	Same..... Device for manufacturing chair-seats.....	April 26, 1870
4,164	Bingham, O. A., assignor to George C. Winchester, Ashburham, Mass. Chair-seat..... (Reissue).....	Oct. 25, 1870
99,520	Bingham, Samuel H., Laurelton, Pa. Combined reel and rake for harvesters.....	Feb. 15, 1870
110,425	Binkly, Lemuel G., Baughman, Ohio. Middlings-purifier.....	Dec. 27, 1870
101,421	Binns, Amos G., Pittsburg, Pa. Nut-lock.....	April 5, 1870
104,253	Binny, William W., assignor to S. W. Pierce, Auburn, N. Y. Gas-machine.....	June 14, 1870
	Binny, William W., and Avery Babbett. (See Babbett & Binny.)	
104,695	Birch, James, Westfield, N. Y., Addison Crosby, Westfield, N. Y., and Thomas Birch, Meadville, Pa. Harvester.....	June 28, 1870
102,753	Birch, John S., New York, N. Y. Adjustable watch-key.....	May 10, 1870
	Birch, Addison, and Erastus G. Covey. (See Covey & Birch.)	
101,216	Bird, Charles, Ackley, Iowa. Cultivator.....	Mar. 29, 1870
108,235	Bird, Edward James, Frostburg, Md. Extracting iron from the slag of blast-furnaces.....	Oct. 11, 1870
99,052	Bird, George M., Dedham, Mass. Variable valve-gear.....	Jan. 25, 1870
103,416	Bird, James R., and George C. Smith, Matteawan, N. Y. Vulcanized India-rubber roll for wringers, drain-drills, &c.....	May 24, 1870
	Bird, James R., and John P. Rider. (See Rider & Bird, assignors.)	
110,542	Birdsell, Edgar M., Penn Yan, N. Y. Grain thrasher, separator, and cleaner.....	Dec. 27, 1870
	Birdsell, J. Benjamin, and Milton V. Bulla. (See Bulla & Birdsell.)	
100,358	Birks, George, Marine, Ill. Compound for preventing incrustation in steam-boilers.....	Mar. 1, 1870
4,027	Bisbee, Albert, assignor to Oscar F. Earle, Norwalk, Ct. Steam-gauge cock. (Reissue).....	June 14, 1870
106,250	Bishop, Abner, Smithville, Ohio. Sausage-stuffer and lard-press.....	Aug. 9, 1870
	Bishop, Charles E. (See Alvord, Henry J., assignor.)	
109,106	Bishop, George W., assignor to self and John McFarland, Baltimore, Md. Neck-tie fastener.....	Nov. 8, 1870
102,547	Bishop, George W., Saratoga Springs, N. Y. Sash-holder and balance.....	May 31, 1870
105,299	Same..... Sash-holder.....	July 12, 1870
108,438	Same..... same.....	Oct. 18, 1870
93,660	Bishop, James B., New Haven, Ct. Retainer for neck-ties.....	Jan. 11, 1870
	Bishop, Joshua, and William J. Huey. (See Adair, John J., assignor.)	
108,319	Bishop, Milton B., Whittingham, Vt. Machine for boarding leather.....	Oct. 18, 1870
98,547	Bishop, Thomas, and Daniel Agnew, Vincennes, Ind. Brick-machine.....	Jan. 4, 1870
109,577	Bishop, William B., Brooklyn, N. Y. Machine for soldering can-caps.....	Nov. 29, 1870
	Bissell & Moore Manufacturing Company. (See Moore, Edwin, assignor) (Design.)	
	Bissell, Charles W., and John Riley. (See Riley & Bissell) ..... (Reissue.)	
107,153	Bissell, Daniel M., Chagrin Falls, Mass. Jeweller's tool.....	Sept. 6, 1870
99,752	Bissell, Frank S., Pittsburg, Pa. Boiler for cooking-stoves.....	Feb. 15, 1870
106,772	Same..... Fire-place grate.....	Aug. 30, 1870
110,001	Bissell, George F., Oneonta, N. Y. Carpenter's vise.....	Dec. 13, 1870
	Biven, William. (See Bartlett, John L., assignor.)	
109,487	Bixler, Francis A., Nashville, Tenn. Device for cutting slats for window shades.....	Nov. 22, 1870
109,375	Bixler, Washington H., assignor to Calvin G. Beitel, Easton, Pa. Broom-holder.....	Nov. 9, 1870
99,653	Black, Andrew C., Kaukauna, Wis. Milking-apparatus. (Antedated Jan. 16, 1870).....	Jan. 25, 1870
101,814	Black, Arthur M., Providence, R. I. Automatic relief-valve.....	April 12, 1870
	Black, Charles S., and Horace S., et al. (See Norris, Black & Black.)	
3,811	Black, Henry, assignor to the Warrior Mower Company, Little Falls, N. Y. Hoisting-apparatus..... (Reissue).....	Jan. 25, 1870
105,629	Black, Henry W., assignor to self and Evan T. Evans, Cecilton, Md. Pruning-shears.....	July 26, 1870
110,337	Black, James Y., Cleveland, Ohio. Corpse-preserving coffin.....	Dec. 20, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,065	Black, Louis, Detroit, Mich. Spectacles.....(Reissue)..	July 12, 1870
99,283	Black, William, Hagerstown, Ind. Sewing-machine.....	Feb. 1, 1870
100,715	Blackburn, Frederick, and George W. Woodside, Philadelphia, Pa. Fare-regis- ter. (Antedated February 28, 1870).....	Mar. 15, 1870
101,572	Blackburn, Joseph M., Charles L. Wood, Benjamin K. Price, and Cornelius A. Sheridan, Cleveland, Ohio. Construction of metallic cornice.....	April 5, 1870
107,436	Blackledge, Edward, Abbeville, Ala. Seed and guano distributor.....	Sept. 29, 1870
104,103	Blackman, William I., Columbus, Miss. Press for cotton, &c.....	June 14, 1870
107,154	Blackmore, William. (See Duncan, George, assignor.)	
	Blackwell, Benjamin B., New York, N. Y. Shooting-stick for printers. (Ante- dated August 26, 1870).....	Sept. 6, 1870
100,846	Blades, L. J., and John Mahoney, Wilmington, Del. Lifting-jack.....	Mar. 15, 1870
98,661	Blair, Frank L., Allegheny, Pa. Coal-scuttle.....	Jan. 11, 1870
	Blair, James T., et al. (See Huntsman, E. N., assignor.)	
110,002	Blaisdell, George P., North Easton, Mass. Self-lubricating axle.....	Dec. 13, 1870
3,925	Blake, Christopher, Boston, Mass. Umbrella-stand.....(Design)..	Mar. 22, 1870
4,447	Same.....same.....(Design).....	Nov. 1, 1870
107,858	Blake, Edward S., Pittsburg, Pa. Roll for crushing and pulverizing machines	Oct. 4, 1870
106,458	Blake, George, Whitby, Canada. Machine for cutting off shafts and pipes and for cutting screw-threads.....	Aug. 16, 1870
104,925	Blake, George A., and William B. Taylor, Calais, Me. Heating-stove.....	July 5, 1870
101,217	Blake, George F., Boston, Mass. Mode of cushioning steam-pistons.....	Mar. 29, 1870
108,554	Same.....Steam-pump. (Antedated October 20, 1870).....	Oct. 25, 1870
100,110	Blake, George W., New York, N. Y. Heater and ventilator.....	Feb. 22, 1870
104,696	Same.....Steam-heater.....	June 28, 1870
103,008	Blake, Grinfill, Taunton, Mass. Rein-hook.....	May 17, 1870
109,488	Blake, Harry, Panama, N. Y. Cream-strainer.....	Nov. 22, 1870
	Blake, H. D. (See Smith, Loyst J., assignor.) (Three cases.)	
108,000	Blake, James, Scranton, Pa. Auxiliary table-attachment.....	Oct. 4, 1870
106,109	Blake, James, assignor to self and George Blake, Scranton, Pa. Support for tables.....	Aug. 9, 1870
106,110	Same.....same.....	Aug. 9, 1870
102,361	Blake, James C., Elizabeth, N. J. Street-pavement.....	April 26, 1870
105,891	Blake, Lucius S., Racine, Wis. Wool-drier.....	Aug. 2, 1870
102,362	Blake, Lyman R., Philadelphia, Pa. Manufacture of boots and shoes.....	April 26, 1870
106,459	Same.....Last for machine-sewed turned-shoe.....	Aug. 16, 1870
107,155	Same.....Sole-sewing-machine.....	Sept. 6, 1870
103,548	Blake, Orris, Peru, Ind. Spring bed-bottom.....	May 31, 1870
109,170	Blake, William, assignor to self and Charles H. Parkton, Buchanan, Mich. Water-wheel.....	Nov. 15, 1870
106,773	Blake, William E., New York, N. Y. Tooth-pick.....	Aug. 30, 1870
	Blake, William Greaves, et al. (See Stevenson, Thompson & Blake, assignors.)	
99,394	Blake, William H., assignor to self and Charles M. Mitchell, Waterbury, Conn. Apparatus for centering shanks or eyes in buttons.....	Feb. 1, 1870
100,588	Blakeley, Ezra, assignor of one-half interest to Peter Pierson, Neponset, Ill. Paint compound.....	Mar. 8, 1870
103,130	Blakeney, James, Springfield, Ohio. Railway-car coupling.....	May 17, 1870
	Blakeslee, Charles W., et al. (See Davis, Blakeslee & Allen, assignors.)	
105,415	Blakeslee, Charles W., assignor to self and Joseph Peck, Watertown, Conn. Trace-fastening.....	July 19, 1870
98,662	Blakeslee, Edward C., assignor to the Benedict and Burnham Manufacturing Company, Waterbury, Conn. Reflector.....	Jan. 11, 1870
101,815	Blakesley, Gilbert H., Bristol, Conn. Tubular shaft for clocks.....	April 12, 1870
110,110	Blakesley, Albert J., and Garner C. Williams, Du Quoin, Ill. Steam-jet pump.	Dec. 13, 1870
	Blanchard, Charles, et al. (See Clark, Hezekiah M., assignor.)	
100,359	Blanchard, F. B., Spuyten Duyvil, N. Y. Combined engine, boiler, and super- heater. (Antedated Feb. 18, 1870).....	Mar. 1, 1870
109,797	Blanchard, Henry, jr., Boston, Mass. Car-coupling.....	Dec. 6, 1870
103,549	Blanchard, Joseph Bond, Boston, Mass. Needle for sewing-machine.....	May 31, 1870
106,026	Same.....Machine for manufacturing needles.....	Aug. 2, 1870
101,347	Blanchard, Nathaniel L., Spuyten Duyvil, N. Y. Water and gas meter. (Ante- dated March 24, 1870).....	Mar. 29, 1870
102,650	Same.....Liquid-meter. (Antedated April 25, 1870).....	May 3, 1870
102,363	Blanchard, Virgil W., Bridport, Vt. Pinion.....	April 26, 1870
99,139	Blanchard, Virgil W., assignor to self and A. J. Severance, Bridport, Vt. Stone-channeling machine.....	Jan. 25, 1870
105,892	Blanchard, William R., Hartford, N. C. Corn and cotton cultivating-plow.....	Aug. 2, 1870
99,140	Bland, John, Thomaston, Ga. Dash-board for carriages.....	Jan. 25, 1870
104,410	Blandin, Thomas, Charlestown, Mass. Jig-saw.....	June 21, 1870
100,360	Blanding, Sanford O., Vineland, N. J. Sifting-apparatus.....	Mar. 1, 1870
110,543	Same.....Sifter.....	Dec. 27, 1870
106,539	Blankenbeker, John M., Power's Station, Ind. Combined harrow and roller...	Aug. 23, 1870
107,859	Blasir, David J., Western, N. Y. Snap-hook.....	Oct. 4, 1870
100,252	Blatchly, A., Central City, Col. Ter. Rock-drill.....	Mar. 1, 1870
109,101	Blatterlien, Frederick A., West Meriden, Conn. Call-bell and caster-stand....	Nov. 8, 1870
105,630	Blauser, Noah G., Etna, Ohio. Sulky-cultivator.....	July 26, 1870
103,708	Blakie, Robert, assignor to Charles W. Gilbert and S. Newell Taft, Hyde Park, Mass. Harness-operating mechanism for looms.....	May 31, 1870
	Blackly, Hugh, et al. (See Jackson, Richard A., assignor.)	
102,754	Bleasdale, William Henry, Chagrin Falls, N. Y. Crimping-attachment to paper- machines.....	May 10, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,631	Bletcher, Thomas, assignor to self and William Riddell, England. Sewing-machine.	July 26, 1870
106,653	Blickensderfer, Ulric, Springfield, Pa. Ditching-machine.	Aug. 23, 1870
100,111	Bliesenick, Charles F., Providence, Pa. Machine for grooving sheet-metal.	Feb. 22, 1870
100,968	Bliesenick, Ferdinand, New York, N. Y. Boot and shoe heel.	Mar. 22, 1870
98,842	Bliesner, William, St. Louis, Mo. Vapor-burner.	Jan. 18, 1870
106,311	Bligh, Samuel L., Sandy Lake, Pa. Hand corn-husker.	Aug. 16, 1870
99,753	Blinn, Charles D., Port Huron, Mich. Wash-boiler.	Feb. 15, 1870
105,632	Bliss, Eliphalet W., assignor to Mays, Bliss & Co., Brooklyn, N. Y. Power-press.	July 26, 1870
	Bliss, Francis D., and George W. Tanner. (See Tanner & Bliss) ..(Two cases.)	
103,968	Bliss, George H., and Martin Rees, West Stockbridge, Mass. Manufacture of wood-paper stock.	June 7, 1870
100,361	Bliss, George W., Brooklyn, N. Y. Culinary-boiler.	Mar. 1, 1870
98,548	Bliss, James T., and Thomas D. Davenport, North Providence, R. I. Weather-strip.	Jan. 4, 1870
	Bliss, Jeremy W. (See Traut, Justus A., assignor.)	
103,286	Bliss, John and George H., Brooklyn, N. Y. Mariner's compass.	May 24, 1870
103,287	Same. .... same	May 24, 1870
103,417	Same. .... Stand for transit-instruments	May 24, 1870
101,218	Bliss, Milton, Ionia, Mich. Machine for picking and dusting wool	Mar. 29, 1870
103,009	Bliss, Milton, assignor to A. M. Bliss, Ionia, Mich. Bobbin.	May 17, 1870
102,480	Bliss, William H., Newport, R. I. Earth chamber-vessel	May 3, 1870
101,219	Bliven, Charles E., Toledo, Ohio. Bracket-hanger.	Mar. 29, 1870
	Block, D. J., et al. (See Foster, H. E., assignor.)	
108,555	Blomgren, John, New York, N. Y. Compass for mining	Oct. 25, 1870
108,095	Blomsten, Bengt C., Waupaca, Wis. Plow	Oct. 11, 1870
3,945	Blood, A. R., A. Hathaway, and V. R. Beach, Independence, Iowa. Cultivator.	May 3, 1870
	(Reissue)	
	Blood, George A., et al. (See King, John C., assignor) .....(Two cases.)	
103,834	Blood, Hannibal S., New Orleans, La. Derrick or hoisting-crane.	June 7, 1870
102,755	Blood, Joel, Watertown, N. Y. Bandaging and boxing cheese	May 10, 1870
107,216	Same. .... Machine for making flanged and beaded hoops.	Sept. 13, 1870
103,131	Bloodgood, John H., Bridgeport, Conn. Roller for sash-strap for carriages.	May 17, 1870
	Bloomingdale, Joel Y., and Isaac Albright, jr. (See Albright & Bloomingdale.)	
105,893	Blossom, Albert H., Miamisburgh, Ohio. Stirrup.	Aug. 2, 1870
	Blunt, John G., et al. (See Smith & Priest, assignors.)	
106,312	Blunt, Thomas E., Brookfield, Ohio. Steam pumping-engine	Aug. 16, 1870
100,969	Blust, C., and Matthew Harbster, assignors to C. Blust, Reading, Pa. Churn-dasher crank-fixture.	Mar. 22, 1870
4,015	Bly, Douglas, Shamburg, Pa. Piston-rod adjuster. ....(Reissue).	June 7, 1870
	Blymyer, Day & Co. (See Dull, Joseph H., assignor.)	
110,192	Blymyer, John S., Mansfield, Ohio. Cane-juice evaporator. (Antedated Dec. 17, 1870)	Dec. 20, 1870
	Boal, James D. (See Barnett, Lewis, assignor.)	
109,107	Boardman, David, Columbus, Ind. Dining-table	Nov. 8, 1870
	Boardman, Henry M., and William Pendleton. (See Pendleton & Boardman.)	
100,847	Boardman, Horace, Port Richmond, N. Y. Steam-engine governor	Mar. 15, 1870
104,822	Boardman, Luther and Norman S., East Haddam, Conn. Spoon-mold	June 23, 1870
	Boatwright, W. E. (See Evans, Lewis A., assignor.)	
	Bochius, George. (See Adler, George W., assignor.)	
109,578	Bocking, Carl, Boston, Mass. Composition for the manufacture of boot and shoe heels. (Antedated Nov. 12, 1870)	Nov. 29, 1870
98,465	Boda, William John, Dayton, Ohio. Extension-table	Jan. 4, 1870
	Bode, Adolph. (See James, John Dawson, jr., assignor) .....(Two cases.)	
103,288	Bodtker, James F., Chicago, Ill. Key-hole guard	May 24, 1870
102,756	Body, Thomas H., Kilbourn City, Wis. Collar for attaching cow-bells	May 10, 1870
109,171	Boecklen, Reinhold, assignor of one-half interest to Henry Forstrick, Brooklyn, N. Y. Machine for making screws and screw-nails.	Nov. 15, 1870
101,816	Boerner, Wannibald R., assignor to self and C. R. Boerner, Chicago, Ill. Wire-work for railways, &c	April 12, 1870
106,990	Boesch, Emil, San Francisco, Cal. Street-lamp.	Sept. 6, 1870
104,411	Bogardus, Robert, New York, N. Y. Car-starter.	June 21, 1870
103,289	Bogart, Isaac, Newport, Ind. Grain-planter	May 24, 1870
100,716	Boggs, William, Covington, Ohio. Straw-stacking machine.	Mar. 15, 1870
109,864	Bohner, George, Chicago, Ill. Attaching lamp-founts to brackets, chandeliers, &c	Dec. 6, 1870
107,437	Boisselier, Gustavus Emil, St. Louis, Mo. Self-locking hinge.	Sept. 20, 1870
99,141	Boivin, Jules Emile, and Desire Loiseau, assignors to Charles Frederick Chandler, France. Process for extracting, manufacturing, and refining sugar.	Jan. 25, 1870
105,894	Bole, John, Grand Rapids, Mich. Paper-cutting machine.	Aug. 2, 1870
	Bolen, Charles M., et al. (See Campbell, Alexander McDonald, assignor.)	
104,104	Bolinder, John, Brooklyn, N. Y. Soft-soap or washing-fluid	June 14, 1870
107,754	Bolis, Victor, St. Mary's Parish, La. Cultivator-plow	Sept. 27, 1870
103,709	Boll, George W., Columbus, Ind. Sawing-machine.	May 31, 1870
	Bolles, George F. (See Eaton, Charles A., assignor.)	
104,697	Bollinger, Oliver J., York, Pa. Water-wheel	June 28, 1870
	Bollman, Jeremiah S., et al. (See Thompson, William, assignor.)	
108,556	Bolthoff, Henry, Central City, Col. Flask for casting stamp-shoes for crushing-mills	Oct. 25, 1870
4,196	Bolton, James, assignor to the Singer Manufacturing Company, Chicago, Ill. Tuck-creasing device for sewing-machines. ....(Reissue).	Dec. 13, 1870
109,798	Bolton, Samuel S., Big Rapids, Mich. Belt-fastener.	Dec. 6, 1870
103,550	Bolton, Simeon R., Prescott, Wis. Tightening wheel tire.	May 31, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, invention or discovery.	Date.
99,142	Bomar, Elijah, assignor to self and William Young, Wartrace, Tenn. Railroad-tie lifter.	Jan. 25, 1870
103,710	Bomar, William C., and Anderson Truxler, Wartrace, Tenn. Railroad-tie lifter.	May 31, 1870
98,466	Bonchard, C. L. (See Raynsford, Frederick, assignor.)	
107,156	Bond, Charles, New York, N. Y. Composition for dyeing and coloring leather, hides and skins.	Jan. 4, 1870
99,821	Bond, Joel L., Marshalltown, Iowa. Corn-planter.	Sept. 6, 1870
99,284	Bond, Lester L., Chicago, Ill. Hoe.	Feb. 15, 1870
105,895	Bond, Thomas, assignor to Daniel J. Clark, W. F. Doggett, and S. M. Burr, East Brookfield, Mass. Trunk.	Feb. 1, 1870
106,111	Bonham, Horace, Philadelphia, Pa. Head-measure for hatters.	Aug. 2, 1870
100,589	Bonine, Lot, assignor to self and Warren W. Camp, Vandalia, Mich. Hame-cap for harness.	Aug. 9, 1870
101,422	Bonnell, Isaac, jr., assignor to self and H. J. Lumbard, Chicago, Ill. Railroad-car ventilator.	Mar. 8, 1870
109,376	Bonnell, Lansing, Milwaukee, Wis. Hot-air furnace. (Antedated March 19, 1870).	April 5, 1870
99,822	Bonner, Thomas E., deceased, by John R. Armstrong, administrator, Elkhart, Ind. Brick-machine.	Nov. 22, 1870
105,896	Bonnet, Bonnet, and Robert Skinner. (See Skinner & Bonnet.)	
107,157	Bonney, Charles S., Syracuse, N. Y. Gate.	Feb. 15, 1870
104,105	Same. Hollow-auger.	Aug. 2, 1870
98,467	Same. Sash-holder.	Sept. 6, 1870
100,363	Bonser, William James, England. Apparatus for feeding cattle on railway trucks.	June 14, 1870
102,082	Boody, N. W., Westbrook, Me. Cattle stanchion.	Jan. 4, 1870
110,544	Bookwalter, John W., Springfield, Ohio. Water-wheel case.	Mar. 1, 1870
100,363	Same. Water-wheel.	Dec. 27, 1870
102,082	Bookwalter, John W., et al. (See Kraatz, David K., assignor.)	
108,753	Boole, L. H., New York, N. Y. Wood-pavement.	Mar. 1, 1870
101,423	Boomer, Almon W., and John P. Haskins, Poultney, Vt. Hemmer for sewing-machines.	April 19, 1870
102,481	Boomer, George E., Thomas G. Morse, and Rufus E. Boschert, Phoenix, N. Y. Cheese-press.	Nov. 1, 1870
101,423	Boon, Alonzo T., and Lucien Mills, Galesburg, Ill. Flour-sifter, cullender, and strainer.	April 5, 1870
100,112	Boone, Charles A., Shickshinny, Pa. Churn.	May 3, 1870
101,705	Boone, Jeremiah H., et al. (See Taylor, Robert R., assignor.)	
101,817	Boone, John L., San Francisco, Cal. Needle sewing-machine.	Feb. 22, 1870
103,551	Boorman, B. (See Balfour, M. G., assignor.)	
107,217	Boorman, John Marcus, Scarborough, N. Y. Hay-loader.	April 12, 1870
101,220	Boorn, Samuel, Lowell, Mass. Mechanism for stopping the shuttle in looms.	April 12, 1870
102,651	Booth, Alfred, Chicago, Ill. Refrigerating oyster-can.	May 31, 1870
108,320	Same. Refrigerating-car.	Sept. 13, 1870
104,254	Booth, James, Worcester, Mass. Shears.	Mar. 29, 1870
103,969	Booth, William S., administrator. (See Clark, H. M., assignor)....(Extension.)	
103,970	Boothby, Columbus S., Saco, Me. Hay-carrier.	May 3, 1870
110,426	Booton, Sinclair, Seguin, Texas. Cotton-press.	Oct. 18, 1870
109,429	Bootsman, Theodore, Tompkinsville, N. Y. Dumping-car.	June 14, 1870
108,096	Bope, Jacob W., assignor to self and C. Aultman, South Bend, Ind. Reel for harvesters.	June 7, 1870
109,490	Same. Reel for harvesters.	June 7, 1870
99,823	Borden, James Sanford, Bloomfield, Ill. Thumb-supporter.	Dec. 27, 1870
103,132	Borden, Spencer, Fall River, Mass. Preparation of garancine.	Nov. 22, 1870
109,108	Bordes, George, New York, N. Y. Device for opening and closing fans.	Oct. 11, 1870
105,543	Borgfeldt, Nicholas H., New York, N. Y. Cigar-mold.	Nov. 22, 1870
104,545	Borgner, Henry C., Lebanon, Pa. Indigo soap.	Feb. 15, 1870
103,970	Borst, Valentine, New York, N. Y. Harness-saddle.	May 17, 1870
109,108	Same. same.	Nov. 8, 1870
105,543	Borthwick, John Atkinson, Philadelphia, Pa. Machine for sharpening saws.	July 19, 1870
104,545	Bortree, Louis S., Grand Rapids, Mich. Horse hay-rake.	June 21, 1870
102,757	Bosch, Francis H. I., executor. (See Brandes, Henry A., assignor.)	
102,758	Boschert, Rufus E., et al. (See Boomer, Morse & Boschert.)	
108,097	Bosley, Elijah M., Baltimore, Md. Steam heating-apparatus.	May 10, 1870
106,774	Bosman, William A. (See Nevins, John H., assignor.)	
99,526	Bosom, Francis, assignor to self and W. A. Wright, Janesville, Mich. Churn-dasher.	May 10, 1870
104,412	Boss, Charles D. and Charles D., jr., New London, Conn. Manufacture of biscuit.	Oct. 11, 1870
104,413	Bosshard, Theodor, Columbus, Ohio. Shuttle-stopping device.	Aug. 30, 1870
104,414	Roston Machine Company. (See Pratt, T. Willis, assignor.)	
104,414	Bostwick, Jabez A., New York, N. Y. Siphon.	Feb. 8, 1870
106,027	Same. Soldering-iron.	June 21, 1870
103,133	Same. Nozzle and sealing-cap for sheet-metal cans.	June 21, 1870
103,552	Same. Apparatus for filling oil-cans.	June 21, 1870
104,255	Boswell, George G. F., et al. (See George, David J., assignor.)	
103,133	Bosworth, Daniel, assignor to Jordan L. Mott, New York, N. Y. Cooking-range.	Aug. 2, 1870
103,552	Bosworth, Harvey, Champlain, N. Y. Clothes-drier.	May 17, 1870
104,255	Both, Adolph C., Germany. Hay and straw cutter.	May 31, 1870
	Bothe, William, assignor to Culbert & Company, Williamsburgh, N. Y. Portable writing-desk.	June 14, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, invention or discovery.	Date.
103,418	Bothwell, Samuel, assignor to self and Ralph Ormrod, Philadelphia, Pa. Welding-powder for iron and steel .....	May 24, 1870
104,106	Botsford, Nathan, Somerset, N. Y. Hame-tug for harness .....	June 14, 1870
101,974	Bottger, Martin H., Sacramento City, Cal. Water-proof compound for boots and shoes .....	April 19, 1870
98,549	Bottomley, Henry, and Peter Greenwood, Camden, N. J. Mechanism for stopping the delivery-rollers of spinning-machines .....	Jan. 4, 1870
98,468	Boudren, Thomas, Bridgeport, Conn. Coach-lamp bracket .....	Jan. 4, 1870
4,002	Same..... Glass column for coach lamps..... (Design) .....	May 3, 1870
107,592	Bouffis, Paul, and John Grossmann, West Hoboken, N. J. Meat and vegetable cutter .....	Sept. 20, 1870
100,848	Boult, M. T., Battle Creek, Mich. Carving wood .....	Mar. 15, 1870
105,633	Boulton, William, Tompkinsville, N. Y. Cutting ashlar .....	July 26, 1870
106,112	Bourgade, Gustave, New York, N. Y. Preparation of albumen .....	Aug. 9, 1870
106,313	Same..... Compound for fertilizer .....	Aug. 16, 1870
107,158	Same..... Manufacture of albumen .....	Sept. 6, 1870
	Same..... (See Lambert, Jean, jr., assignor.) .....	
109,579	Bourn, Augustus O., Providence, R. I. Elastic roller for wringers, &c. ....	Nov. 29, 1870
105,634	Bourne, Amos H., Fort Scott, Kansas. Compound for the manufacture of paint. (Antedated June 9, 1870) .....	July 26, 1870
108,001	Bourne, Edward, Pittsburg, Pa. Radiator .....	Oct. 4, 1870
110,003	Same..... Steam-heater .....	Dec. 13, 1870
107,218	Bourne, Elijah, New Iberia, La. Plow, planter, and cultivator .....	Sept. 13, 1870
104,256	Bourne, William, assignor to self and Nathaniel Cummings, Boston, Mass. Piano-forte .....	June 14, 1870
99,054	Bouscay, Elvi, jr., Norwalk, Ohio. Device for applying braid to fabrics in sewing-machines. (Antedated Jan. 14, 1870) .....	Jan. 25, 1870
101,975	Boutelle, James E., Fisherville, N. H. Lathe-spindle .....	April 19, 1870
103,553	Bouvier, Leopold. (See Tellier, Charles, assignor.) .....	
	Bouziat, Gabriel Charles, France. Mode and material for constructing floors, ceilings, roofs, &c .....	May 31, 1870
99,527	Bovey, George C., Cincinnati, Ohio. Sediment chamber for lamp-posts .....	Feb. 8, 1870
100,590	Same..... Brick-machine .....	Mar. 8, 1870
106,775	Bowden, William, assignor to self and Abbott C. Calkins, Hamburg, N. Y. Machine for upsetting tires .....	Aug. 30, 1870
105,300	Bowdoin, David W., Salem, Mass. Elastic transfer printing .....	July 12, 1870
107,860	Bowen, Newton M., Knightstown, Ind. Grain and seed cleaner .....	Oct. 4, 1870
103,554	Bowen, Otis E., Needham, Mass. Composition for coating shingles and clapboards .....	May 31, 1870
100,491	Bowen, William, Dayton, Mich. Bed-bottom. (Antedated March 1, 1870) .....	Mar. 8, 1870
101,976	Bower, Jacob, Dayton, Ohio. Cultivator .....	April 19, 1870
105,897	Bower, Samuel L., Auburn, N. Y. Device for riveting .....	Aug. 2, 1870
	Bower, William, and Josiah H. Nichols. (See Nichols & Bower.) (Three cases.) .....	
100,206	Bowers, Henry L., Harrisburg, Pa. Cellar-hoist or elevator .....	Feb. 22, 1870
	Bowers, Sylvester. (See Tuell, Melzer, assignor.) .....	
103,835	Bowker, Daniel, Boston, Mass. Post for pegging-jack .....	June 7, 1870
103,290	Bowker, James, assignor to Bair, Brothers & Co., Baltimore, Md. Paint for ships' bottoms, &c .....	May 24, 1870
103,291	Same..... Varnish for tin-ware .....	May 24, 1870
	Bowker, Joel, and Charles H. Hudson. (See Hudson & Bowker.) .....	
99,824	Bowker, Milton, and Joseph L. Stratton, Fitchburgh, Mass. Instrument for dividing circles .....	Feb. 15, 1870
4,036	Bowles, John, assignor of part interest to Samuel P. Ross, Augusta, Ga. Corn-sheller .....	June 21, 1870
104,107	Bowman, Daniel, Johnson City, Tenn. Millstone dress .....	June 14, 1870
106,113	Bowman, George E., Hagerstown, Md. Water-cooler, &c .....	Aug. 9, 1870
109,289	Bowman, John, Princeville, Ill. Combined threshing-machine and corn-sheller .....	Nov. 15, 1870
103,003	Bowman, Uriah, Craig's Mills, West Va. Flouring-mill .....	May 10, 1870
107,861	Bowman, William, Etna Green, Ind. Circular saw-mill .....	Oct. 4, 1870
109,715	Bowne, Robert T., Fallston, Md. Gate .....	Nov. 29, 1870
101,573	Boxley, George, Troy, N. Y. Ironing-machine .....	April 5, 1870
	Boyce, Louis D., and G. H. Jones. (See Jones & Boyce.) .....	
105,031	Boyd, Alexander, Boston, Mass. Rivet .....	July 5, 1870
105,898	Boyd, Asabel C., assignor to E. W. Vaill, Worcester, Mass. Folding-chair .....	Aug. 2, 1870
101,221	Boyd, Clark, Andover, N. Y. Turbine water-wheel .....	Mar. 29, 1870
99,528	Boyd, Francis E., Boston, Mass. Metallic cartridge .....	Feb. 8, 1870
	Boyd, Frederick, and James Woodruff. (See Woodruff & Boyd.) .....	
	Boyd, J. F., et al. (See Strong, R. H., assignor.) .....	
108,557	Boyd, James P., assignor to self and Aaron H. Miller, La Porte, Indiana. Window-blind .....	Oct. 25, 1870
101,574	Boyd, John G., assignor to self and Allen Bailey, Decatur, Texas. Sulky-plow ..	April 5, 1870
106,460	Boyd, Minor P., Unionville, S. C. Dining-table .....	Aug. 16, 1870
4,504	Boyd, Robert, and James C. Hart, Rochester, N. Y. Base of a hot-air furnace .....	Dec. 13, 1870
	Boyd, Samuel and Roger, et al. (See Stearns, Caleb C., assignor.) .....	
104,546	Boyd, Thomas B., St. Louis, Mo. Life-preserver .....	June 21, 1870
105,544	Boyd, William, Mansfield, Mass. Winker for harness-bridles .....	July 19, 1870
108,679	Boyden, Pardon, assignor to self and William R. Stone, Amsterdam, N. Y. Detachably-tipped whip .....	Oct. 25, 1870
100,007	Boyden, William A., and C. J. Mann, Altoona, Pa. Vegetable-cutter .....	Feb. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, invention or discovery.	Date.
	Boyes, Burritt C., deceased, by Sady D. Boyes, administratrix, Philadelphia, Pa. Folding-guide for sewing-machines ..... (Extension) ..	July 6, 1870
103,836	Boyle, David, San Francisco, Cal. Pneumatic gas-machine .....	June 7, 1870
98,913	Boyle, Hugh, Waterloo, Iowa. Turbine water-wheel .....	Jan. 18, 1870
	Boynton, Charles, and Henry A. Efner. (See Efner & Boynton.)	
3,963	Boynton, C. B., assignor to John B. Fletcher, St. Albans, Vt. Railway axle-box ..... (Reissue) ..	May 10, 1870
	Same..... Railway axle-box. (Disclaimer filed Nov. 23, 1870.)	
107,653	Boynton, Charles E., assignor to self and Isaac N. Vosburg, San Francisco, Cal. Tool for cutting wood-moldings .....	Sept. 27, 1870
99,825	Boynton, Eben Moody, Grand Rapids, Mich. Handle for cross-cut saws .....	Feb. 15, 1870
105,032	Same..... West Newbury, Mass. Saw-frame .....	July 5, 1870
106,251	Boynton, Edward S., assignor to self and Charles Parker, Meriden, Conn. Process of forming vacuum in freezing-apparatus .....	Aug. 9, 1870
104,698	Boynton, Edwin, Palmyra, Wis. Bag-holder .....	June 28, 1870
106,114	Boynton, Henry W., Haverhill, Mass. Shutter-worker .....	Aug. 9, 1870
	Boynton, John F., Syracuse, N. Y. Apparatus for generating carbonic acid. (Disclaimer filed Sept. 24, 1870.)	
110,427	Same..... Method of producing illuminating gas .....	Dec. 27, 1870
3,809	Boynton, John F., assignor to Henri L. Stuart, New York, N. Y. Steam-generator ..... (Reissue) ..	Jan. 25, 1870
110,004	Boynton, Leander W., Hartford, Conn. Cleaner and grinder for carding-machines .....	Dec. 13, 1870
100,717	Boynton, Leroy, and W. F. Sweet, Jackson Township, Pa. Detachable handle for knives and forks .....	Mar. 15, 1870
98,914	Boynton, Nathaniel A., New York, N. Y. Fender for heating stoves .....	Jan. 18, 1870
98,915	Same..... Base-burning stove .....	Jan. 18, 1870
4,109	Boynton, R. H., Oshkosh, Wis. Spoke-machine .....	Aug. 30, 1870
103,439	Boynton, Ralph H. and Horace S., Oshkosh, Wis. Machine for dressing spokes .....	Oct. 18, 1870
104,415	Boyer, William, New York, N. Y. Paper-file .....	June 21, 1870
104,546	Bozorth, John, Camden, N. J. Detaching-hook .....	June 21, 1870
	Brabrook, George, <i>et al.</i> (See Parkin, William, assignor.)	
	Same..... (See Leech, Thomas, assignor.)	
100,591	Brace, Julius, and J. L. Fulton. (See Fulton & Brace.) (Two cases.)	
	Bracher, Thomas, Rahway, N. J. Water-proof fabric. (Antedated Feb. 26, 1870) .....	Mar. 8, 1870
99,395	Bracker, T. W., New York, N. Y. Printing-press .....	Feb. 1, 1870
	Braches, Charles. (See Frings, Charles H., assignor.)	
103,711	Brackett, Frederick, Minneapolis, Minn. Lock for securing revenue stamps on beer barrels .....	May 24, 1870
102,083	Brackett, Samuel, Wenona, Mich. Washing-machine .....	April 19, 1870
	Brackett, Sewell. (See Ordway, John M., assignor.)	
102,908	Bradbury, Lewis R. (See Thompson, Taylor P., assignor.)	
	Bradford, Charles K., assignor to self, James F. Bradford, and W. N. Yost, Lynnfield, Mass. Railway car-wheel .....	May 10, 1870
	Bradford, Hezekiah, Reading, Pa. Ore-washer ..... (Extension) ..	Aug. 11, 1870
108,962	Same..... same. (Antedated October 23, 1870) .....	Nov. 8, 1870
104,257	Bradford, Horace C., assignor of one-half interest to H. W. Fenner, Providence, R. I. Machine for setting button on lacing-hooks .....	June 14, 1870
109,799	Bradford, Lewis G., assignor to self and Nathaniel H. Morton, Plymouth, Mass. Bedstead-joint .....	Dec. 6, 1870
103,971	Bradford, Nathaniel, Addison, Me. Mechanical movement .....	June 7, 1870
	Bradley & Hubbard. (See Dockstader, Lansing, assignor.)	
	Bradley & Hubbard. (See Cinquini, Pietro, assignor.) (Design.) (Two cases.)	
110,428	Bradley, Alfred, assignor to self and W. L. Cushing, New Orleans, La. Portable fare-box .....	Dec. 27, 1870
105,033	Bradley, Benjamin H., New York, N. Y. Machine for making nuts .....	July 5, 1870
105,899	Bradley, Charles C., and Benjamin F. Upson, Brodhead, Wis. Whiffletree trace-hook .....	Aug. 2, 1870
104,926	Bradley, George, Rockford, Ill. Seed-sower and cultivator .....	July 5, 1870
109,580	Bradley, George, and Nelson A. Walker, Rockford, Ill. Clothes-pin. (Antedated Nov. 14, 1870) .....	Nov. 29, 1870
	Bradley, James P. (See Baranger, Henry, assignor.)	
105,034	Bradley, Joseph W., Rocheport, Mo. Flour-bolt knocker .....	July 5, 1870
103,558	Bradley, Leverett, Jersey City, N. J. Apparatus for deodorizing and improving alcoholic and vinous liquids .....	Oct. 25, 1870
99,628	Bradley, Lyman, and Thomas D. Phillips, assignors to selves and A. D. Denny, Buffalo, N. Y. Preserving fruits, vegetables, &c. ....	Feb. 8, 1870
103,419	Bradley, Richard T., and Henry W. Wansbrough, assignors to R. T. Bradley and C. A. Scott, Cincinnati, Ohio. Roller-skate .....	May 24, 1870
	Bradley, R. T., and H. C. Stewart. (See Stewart & Bradley.) (Two cases.)	
99,826	Bradley, Samuel C., assignor to self and Charles E. Thompson & Co., New Haven, Conn. Clamp .....	Feb. 15, 1870
105,164	Bradley, Thomas H., St. Louis, Mo. Bird-cage .....	July 12, 1870
	Bradshaw, Clinton D., and John H. Martin. (See Martin & Bradshaw.)	
107,331	Bradshaw, John A., William H. Brown, and Darius Whithead, Lowell, Mass. Power-meter .....	Sept. 13, 1870
108,871	Bradshaw, John A., and Seldon L. Crockett, assignors to Seldon L. Crockett, Lowell, Mass. Measuring apparatus for looms, &c. (Antedated October 21, 1870) .....	Nov. 1, 1870
101,818	Bradt, William H., New Scotland, N. Y. Brake-block for wagons .....	April 12, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,759	Bradway, Charles, Maquoketa, Iowa. Mop-wringer.....	May 10, 1870
103,837	Brady, James, assignor to Branford Lock Works, Branford, Conn. Door-key..	June 7, 1870
103,838	Same.....Lock.....	June 7, 1870
104,823	Same.....Door-key.....	June 23, 1870
108,098	Same.....Lock.....	Oct. 11, 1870
108,099	Same.....same.....	Oct. 11, 1870
104,548	Brady, James G., Forest Hill, Mich. Log loader and piler.....	June 21, 1870
100,492	Brady, James W., assignor to M. W. Brady, Baltimore, Md. Coffee-cleaning-machine.....	Mar. 8, 1870
100,493	Same.....same.....	Mar. 8, 1870
110,193	Brady, James W., Baltimore, Md. Apparatus for pitching barrels.....	Dec. 20, 1870
108,100	Brady, John, Fall River, Mass. Machine for brushing yarn.....	Oct. 11, 1870
100,364	Brady, John C. and James H., Corsica Borough, Pa. Snap-hook and buckle....	Mar. 1, 1870
98,550	Brady, Reuben, New York, N. Y. Machine for cutting and pressing the heads of metal cans.....	Jan. 4, 1870
4,055	Braentigam, John and Henry, Chicago, Ill. Dog-muzzle.....(Design)...	May 24, 1870
101,575	Bragdon, Zebina L., Bangor, Me. Sewer-grate.....	April 5, 1870
103,972	Braidwood, William, and Horatio J. Hewitt, New York, N. Y. Water-wheel..	June 7, 1870
100,718	Brainard, Leverett, Hartford, Conn. Rag whipper and duster for treating paper-stock, &c.....	Mar. 15, 1870
109,173	Brainerd, Alexander H., Rome, N. Y. Furnace for deoxidizing iron ore.....	Nov. 15, 1870
	Brainerd, James P., <i>et al.</i> (See Armstrong, Benjamin A., assignor.)	
	Braitegan, N., <i>et al.</i> (See Myers, Harvey L., assignor.)	
	Braley, James. (See Bronson, Levi, assignor.)	
106,540	Braley, Joel S., John A. and Philip L. Schmitt, Utica, Mo. Method of putting face-dress on mill-stones.....	Aug. 23, 1870
99,055	Bramwell, Paul and W. C., Arrow Rock, Mo. Spinning-machine.....	Jan. 25, 1870
108,963	Branch, James C., and Hugh P. Quin, Washington, Ga. Liniment.....	Nov. 8, 1870
	Branch, Joseph W. (See Milligan, John F., assignor.)	
104,416	Brandes, Henry A., deceased, by Francis H. I. Bosch, executor, Newark, N. J. Instrument for giving fluid medicines to animals.....	June 21, 1870
	Brandon, James. (See Harte, Thomas J., assignor.)	
	Branford Lock Works. (See Brady, James, assignor).....(Five cases.)	
104,417	Branig, Julius M., New York, N. Y. Tuning-pin for pianos.....	June 21, 1870
103,134	Brase, Adolph, and Lemuel Salladey, Sciotoville, Ohio. Revolving-grate for fire-places.....	May 17, 1870
103,839	Same.....Railroad-car stove.....	June 7, 1870
	Brash, Peter, and William Young. (See Young & Brash.)	
	Brasher, W. N. & Co. (See Christie, Hugh, assignor).....(Design.)	
103,135	Brasier, Edward, assignor to John Eliot Hodgkin, England. Machine for breaking, scutching, and separating fibrous materials.....	May 17, 1870
	Brass, Robert, and Louis Chevallier. (See Chevallier & Brass.)	
108,559	Bratnober, August, Webster County, Iowa. Horse-collar fastening.....	Oct. 25, 1870
99,285	Brattan, Thomas, assignor to A. H. Dixon, England. Gas-meter.....	Feb. 1, 1870
	Bratton, W. G., and A. H. Bailly. (See Bailly & Bratton.)	
107,862	Braucher, James F., Lincoln, Ill. Combined plow and harrow.....	Oct. 4, 1870
100,849	Brauer, Louis, Washington, D. C. Apparatus for making extracts and decoctions from coffee, tea, and other substances.....	Mar. 15, 1870
102,760	Braun, Frederick, and Augustus Theodore Schmidt, Pittsburgh, Pa. Bleaching, tanning, and coloring sponges.....	May 10, 1870
	Braun, George, <i>et al.</i> (See Warth, Hufeland, and Braun, assignors.)	
99,629	Braun, Martin, Cape Vincent, N. Y. Aerial-ship.....	Feb. 8, 1870
105,035	Same.....Double-acting pump.....	July 5, 1870
	Brawdy, John, <i>et al.</i> (See Woodworth, Brawdy & Merithew.)	
	Bray, Edward P. (See Renshaw, David, assignor.)	
103,420	Bray, Mellen, Boston, Mass. Nozzle and stopper for cans, &c.....	May 24, 1870
100,970	Bray, Morris P., Ansonia, Conn. Fastening for corsets.....	Mar. 22, 1870
107,863	Brayton, George Bailey, Boston, Mass. Slide-valve.....	Oct. 4, 1870
101,819	Brazenor, E. L., assignor to Richard Brazenor, England. Horse-collar block..	April 12, 1870
99,827	Breckenridge, E. K., West Meriden, Conn. Sash-holder.....	Feb. 15, 1870
	Breed, Daniel. (See Mitchell, Thomas A., assignor.)	
	Same.....(See Fisher, John F., assignor).....(Two cases.)	
98,663	Breed, Nathan, Jeffersonville, Ind. Corn-planter and corn-cultivator.....	Jan. 11, 1870
107,159	Breed, Thomas H., Dundee, Mich. Flood-gate.....	Sept. 6, 1870
100,113	Breeden, Joseph, England. Stop-cock. (Patented in England Feb. 23, 1869)...	Feb. 22, 1870
101,977	Same.....Stop-cock for steam and liquids. (Patented in England Dec. 21, 1868).....	April 19, 1870
110,194	Brehm, Edward, Jersey City, N. J. Revolving-cannon.....	Dec. 20, 1870
106,314	Bremser, John Charles F., St. Louis, Mo. Foot-measure.....	Aug. 16, 1870
	Brenneis, Philipp, and Johann Hoff. (See Hoff and Brenneis.)	
	Brett, Burt, <i>et al.</i> (See Weston, Weston, Weston and Brett.)	
	Brett, Robert E. (See Donor, H. E., assignor.)	
108,560	Brett, Thomas, Geneva, Ohio. Melodeon.....	Oct. 25, 1870
105,900	Brettell, Edward W., Elizabeth, N. J. Attaching caps to bases of bell-levers..	Aug. 2, 1870
103,561	Same.....Permutation-lock.....	Oct. 25, 1870
100,592	Brevoort, Henry L., Brooklyn, N. Y. Reducing-gear for steam-engine indicators	Mar. 8, 1870
	Brevoort, Henry L., and William Craig. (See Craig & Brevoort.)	
102,084	Browbaker, Isaac, assignor to William A. McClure, Fincastle, Va. Churn-dasher.....	April 19, 1870
102,213	Brewer, Alanson T., Brighton, Mass. Counterpoise-platform for ordnance.....	April 26, 1870
102,214	Same.....Rammer-stave.....	April 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,008	Brewer, James F., assignor to self and S. Stow Manufacturing Company, Plantsville, Conn. Coal-shovel .....	Feb. 22, 1870
	Brewer, Philip, <i>et al.</i> (See Putt, Daniel W., assignor.)	
	Brewster, Henry, <i>et al.</i> (See Thomas, Daniel W., assignor) ..... (Design.)	
99,143	Brewster, John C., New York, N. Y. Desulphurizing-oven .....	Jan. 25, 1870
99,630	Same..... Amalgamator .....	Feb. 8, 1870
104,700	Brewster, William S., Chicago, Ill. Preparation of wheat for food .....	June 28, 1870
101,348	Brick, Samuel Reeve, Philadelphia, Pa. Exhausting-apparatus for gas-works ..	Mar. 29, 1870
99,396	Bride, Timothy C., Quincy, Ill. Hydrant .....	Feb. 1, 1870
104,258	Bridge, Lewis, assignor to David Stuart and Richard Peterson, Philadelphia, Pa. Stove-grate .....	June 14, 1870
	Bridge, Lewis, and David Stuart. (See Stuart & Bridge, assignors). (Six cases.)	
107,654	Bridgeman, Lewis H., Rock Stream, N. Y. Machine for cutting material for baskets .....	Sept. 27, 1870
	Bridgeport Brass Company. (See Smith, George L., assignor.)	
	Bridgeport Manufacturing Company. (See Stedman, Nathan, assignor.) (Re-issue.)	
102,482	Bridges, Albert, New York, N. Y. Rack for cars .....	May 3, 1870
101,978	Bridges, William C., Michigan City, Ind. Belt-replacer .....	April 19, 1870
	Briggs, Franklin A., <i>et al.</i> (See Curtis, Briggs & Cox) ..... (Design.)	
	Briggs, Frederic M., and Justin G. Thompson. (See Thompson & Briggs.)	
105,772	Briggs, George H., Montgomery, Ala. Automatic-fan .....	July 26, 1870
108,680	Briggs, John, Higganum, Conn. Reeling-machine .....	Oct. 25, 1870
100,009	Briggs, John C., Ansonia, Conn. Organ and melodeon action .....	Feb. 22, 1870
107,655	Same..... Melodeon .....	Sept. 27, 1870
103,712	Briggs, Joshua, Peterborough, N. H. Clothes-drier .....	May 31, 1870
99,828	Briggs, Martin, Rochester, N. Y. Bolt-work for safe-doors, &c .....	Feb. 15, 1870
	Briggs, O. C., and George Selden. (See Selden & Briggs, assignors.)	
109,377	Briggs, Richard F., Amesbury, Mass. Sliding-seat for carriages .....	Nov. 22, 1870
99,056	Briggs, Warren R., Boston, Mass. Bed-bottom .....	Jan. 25, 1870
99,825	Briggs, Warren R., assignor to M. G. Briggs, Boston, Mass. Table-leaf support.	Feb. 15, 1870
	Brigham, Thaddeus W., <i>et al.</i> (See Beatty, James H., assignor.)	
	Bright, Richard, jr. (See Scholfield, Socrates, assignor.)	
98,737	Brinkerhoff, C. R., Rochester, N. Y. Harvester .....	Jan. 11, 1870
109,581	Brinkerhoff, John DeWitt, and James Duthie, Morrisania, N. Y. Construction of globes, maps, &c., for schools .....	Nov. 29, 1870
101,576	Brine, Mary D., Chicago, Ill. Portable swing .....	April 5, 1870
106,461	Bringman, George E., assignor to William G. Schaeffer & Co., Baltimore, Md. Toy-toad .....	Aug. 16, 1870
	Bringman, George E., Philadelphia, Pa. Meat and vegetable cutter .....	Dec. 13, 1870
100,850	Brinkerhoff, George E., New York, N. Y. Cigar-shield .....	Mar. 15, 1870
	Brinkerhoff, Jacob. (See Van Dusen, John D., assignor.)	
3,831	Brinkmann, Theodore, Greenville, Tenn. Fire and water proof paint and cement .....	Mar. 22, 1870
	Brinly, T. E. C., Louisville, Ky. Plow .....	Feb. 15, 1870
99,830	Same..... Plow-clevis .....	May 3, 1870
102,632	Same..... Plow .....	Nov. 15, 1870
109,290	Same..... same .....	Nov. 15, 1870
109,291	Same..... Cotton-sweep .....	Nov. 22, 1870
109,491	Same..... same .....	April 19, 1870
101,979	Brintnall, Thomas M., Medina, Ohio. Cloth-measuring apparatus .....	Dec. 20, 1870
110,195	Briscoe, Benjamin, Detroit, Mich. Seal-lock .....	
	Bristol Brass and Clock Company. (See Taplin, Alvin, assignor). (Three cases.)	
102,909	Bristol, Truman, assignor to self and Charles Monson, Cheshire, Conn. Water-wheel .....	May 10, 1870
100,365	Bristow, Thomas, assignor to Amasa Sprague, Cranston, R. I. Manufacture of madder-dye .....	Mar. 1, 1870
104,259	Same..... Preparation of coloring-matter from madder for dyeing .....	June 14, 1870
99,144	Brittin, John W., Black Rock, Conn. Casting hollow cylinder .....	Jan. 25, 1870
98,916	Brittingham, W. B., Lafayette, Ind. Tanning and stuffing leather .....	Jan. 18, 1870
4,129	Same..... same .....	Sept. 27, 1870
109,714	Same..... Tanning-composition .....	Nov. 29, 1870
106,115	Britton, James, assignor to self and Garrett Brower, Williamsburgh, N. Y. Kettle-bail .....	Aug. 9, 1870
106,991	Same..... Top for sheet-metal cans .....	Sept. 6, 1870
105,416	Broad, Gustavus B., Waterville, Me. Shawl-strap .....	July 19, 1870
	Broadbent, Sidney, <i>et al.</i> (See Weston, Broadbent & Culver.)	
99,057	Broadbooks, Peter, Batavia, N. Y. Cutting-pincers .....	Jan. 25, 1870
105,635	Broadwell, Charles B., New Orleans, La. Railway-car starter .....	July 26, 1870
110,338	Broadwell, Lewis Wells, Grand Duchy of Baden. Feeder for repeating fire-arms .....	Dec. 20, 1870
105,417	Brobst, Caleb, Winnimac, Ind. Cutter for tonguing and grooving .....	July 19, 1870
	Brock, Orville W., and James H. Hawes. (See Hawes & Brock, assignors.)	
	Brock, Seth W., and John G. Burchfield. (See Burchfield & Brock.)	
100,593	Brock, William E., New York, N. Y. Blind .....	Mar. 8, 1870
104,549	Brockett, Leonard, assignor to self and David J. Stillson, West Haven, Conn. Soap .....	June 21, 1870
103,713	Brocklebank, John W., and George W. Tubbs, New York, N. Y. Wood pavement .....	May 31, 1870
4,361	Brocksieper, Frederick W., assignor to Sargent & Co., New Haven, Conn. Blower-holder .....	Sept. 27, 1870
	Same..... Fire-set holder .....	Sept. 27, 1870
4,362	Same..... Fire-dog .....	Sept. 27, 1870
4,363	Same..... Door-pull .....	Sept. 27, 1870
4,364	Same..... same .....	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,428	Brocksieper, Frederick W., assignor to Sargent & Co., New Haven, Conn. Match-safe..... (Design)...	Oct. 25, 1870
4,467	Same..... Lock-front..... (Design)...	Nov. 15, 1870
106,252	Brockway, Jeremiah, Richland Centre, Wis. Hop-press.....	Aug. 9, 1870
102,215	Brockway, Joseph W., New York, N. Y. Lubricator for loose pulleys.....	April 26, 1870
101,349	Brockway, Truman, Chatsworth, Ill. Corn-planter.....	Mar. 29, 1870
102,216	Brodie, Alexander, Union, Mich. Calculator.....	April 26, 1870
4,110	Brokenshire, John, assignor of part interest to George Goble and J. D. Macfarlane, Canada. Pump..... (Reissue, Division A)...	Aug. 30, 1870
4,111	Same..... same..... (Reissue, Division B)...	Aug. 30, 1870
98,843	Brombacher, Charles, Tarrytown, N. Y. Combined cutter and shears.....	Jan. 18, 1870
101,577	Same..... Tinman's machine.....	April 5, 1870
	Bromer, Julius, <i>et al.</i> (See Wicke, Frederick, <i>et al.</i> )	
	Bromley, James, and Brothers. (See Crabtree, Jonathan, assignor.) (Three cases.)	
	Same..... (See Allinson, James, assignor)..... (Design.)	
	Same..... (See Kerr, William, assignor)..... (Design.)	
103,425	Bronson, David C., Great Bend, Pa. Spring bed-bottom.....	May 24, 1870
101,980	Bronson, Ira, Lockport, N. Y. Shifting rail for buggies.....	April 19, 1870
110,196	Bronson, Levi, assignor to James Braley, Buffalo, N. Y. Fanning-mill.....	Dec. 20, 1870
102,217	Bronson, Willis S., Hartford, Ct. Hot-air register.....	April 26, 1870
99,145	Brooke, Homer, New York, N. Y. Manufacture of insulators for telegraph-poles.....	Jan. 25, 1870
107,593	Brooke, William E., assignor to self and William H. Ivens, Trenton, N. J. Saw.....	Sept. 20, 1870
105,557	Brookfield, James M., Brooklyn, N. Y. Mode of forming insulators.....	May 31, 1870
107,864	Brookhouse, William N., West Danvers, Mass. Manufacture of boots and shoes.....	Oct. 4, 1870
109,865	Brookmire, James H., St. Louis, Mo. Apparatus for cleaning and polishing coffee.....	Dec. 6, 1870
	Brooks, Albert Harvey. (See Pennoyer, Dorwin Dorman, assignor.)	
	Brooks, David. (See Dechant, William H., assignor.)	
104,550	Brooks, Edwin C., Norwich, N. Y. Boiler and washer.....	June 21, 1870
98,917	Brooks, Franklin W., New York, N. Y. Seal lock.....	Jan. 18, 1870
99,831	Same..... same.....	Feb. 15, 1870
104,701	Same..... Stamp-canceler.....	June 28, 1870
	Brooks, Franklin W., and Joseph Corbett. (See Corbett & Brooks.)	
106,462	Brooks, Heman P., Waterbury, Ct. Bread-toaster.....	Aug. 16, 1870
109,715	Same..... Plate-lifter.....	Nov. 29, 1870
99,146	Brooks, John W., Boston, Mass. Corset skirt-supporter.....	Jan. 25, 1870
103,556	Same..... same.....	May 31, 1870
100,719	Brooks, Joshua, Boston, Mass. Fan and parasol combined.....	Mar. 15, 1870
109,378	Brooks, Leroy, Mt. Pleasant, Iowa. Trace-buckle.....	Nov. 22, 1870
99,754	Brooks, Reuben, jr., Rockport, Mass. Air-pistol.....	Feb. 15, 1870
102,910	Brooks, Rhodom M., Woodbury, Ga. Fertilizer-distributor, corn and cotton planter.....	May 10, 1870
102,761	Brooks, Silas M., Memphis, Tenn. Bird-trap.....	May 10, 1870
106,028	Brooks, Silas M., assignor to self and Charles G. Thompson, Memphis, Tenn. Spring bed-bottom.....	Aug. 2, 1870
	Brooks, Silas N., administrator. (See Yale, Linus, jr.)	
	Brooks, William F., New York, N. Y. Making seamless metal-tubes.. (Extension).....	Mar. 30, 1870
	Broome, Charles. (See Douden, Edwin, assignor.)	
103,480	Broomsell, Henry, Christiana, Pa. Valve mechanism for oscillating-engines.....	June 7, 1870
102,653	Broomsell, Henry, and Albin W. Wilson, Christiana, Pa. Saw.....	May 3, 1870
	Brosser, Charles Edward. (See Henricksen, Hans Peter, assignor.)	
109,800	Brothwell, John G., assignor to Turner, Seymour & Judds, Wolcottville, Conn. Curtain fixture.....	Dec. 6, 1870
108,872	Broughton, John, Brooklyn, N. Y. Bustle.....	Nov. 1, 1870
108,873	Same..... same.....	Nov. 1, 1870
	Broughton, Milton, and Timothy L. Carley. (See Carley & Broughton.)	
	Brower, Garrett. (See Britton, James, assignor)..... (Two cases.)	
109,292	Brower, Henry L., assignor to Charles D. Fredericks, New York, N. Y. Connecting fire-detectors with the alarms.....	Nov. 15, 1870
102,364	Brown, Addison P., assignor to Continental Windmill Company, Syracuse, N. Y. Windmill.....	April 26, 1870
4,169	Brown, Addison P., assignor to Continental Windmill Company, New York, N. Y. Self-regulating windmill..... (Reissue)...	Oct. 25, 1870
105,901	Brown, Adna, Springfield, Vt. Egg-holder.....	Aug. 2, 1870
	Brown, Adolph and Felix, New York, N. Y. Machine for cutting loaf-sugar. (Extension).....	Mar. 16, 1870
102,293	Same..... Machine for cutting loaf-sugar.....	Nov. 15, 1870
105,654	Brown, Alanson, Rochester, N. Y. Bread-toaster.....	Aug. 23, 1870
103,010	Brown, Albert C., Chicago, Ill. Window-screen.....	May 17, 1870
99,147	Brown, Albert G., Hartford, Conn. Ink-retaining attachment for pens.....	Jan. 25, 1870
105,165	Brown, Alzirus, Worcester, Mass. Horse hay-rake.....	July 12, 1870
	Same..... (See Raezer, Mathias, assignor)..... (Reissue.)	
99,631	Brown, Andrew, and William Patterson, Brooklyn, E. D., N. Y. Base for summer-pieces and grate-frames.....	Feb. 8, 1870
100,114	Brown, Benoni S., Chicago, Ill. Clothes-drier.....	Feb. 22, 1870
	Brown, Benoni S., <i>et al.</i> (See Phillips, Thomas D. and Thomas S., assignors.)	
103,557	Brown, Bird R., and James Toono, jr., Jackson, Tenn. Hay and cotton press.....	May 31, 1870
99,517	Brown, Charles, Charlottesville, Va. Boot-jack.....	Feb. 1, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name residence; and invention or discovery.	Date.
103,421	Brown, Charles, assignor to self and Aaron G. Salmon, Adrian, Mich. Hammer-strap for wagons.....	May 24, 1870
	Brown, Charles H., and Charles Burleigh. Valve-gear for steam-engines. (Extension).....	Jan. 14, 1870
104,927	Brown, Collins, B., Springfield, Mo. Harvester-rake.....	July 5, 1870
102,365	Brown, David, Hampden, Me. Balance pivot-gate.....	April 26, 1870
	Brown, David F., <i>et al.</i> (See Thorpe, Joseph, W., assignor.)	
	Brown, David G. (See Fickel, Henry, assignor.)	
108,101	Brown, Dominick D., Oswego, N. Y. Chock for holding ropes.....	Oct. 1, 1870
101,424	Brown, Edward, Greenpoint, N. Y. Ice-pick.....	April 5, 1870
102,654	Brown, Edward, Philadelphia, Pa. Pyrometer.....	May 3, 1870
109,294	Brown, Edward, Kennebunk, Me. Hand drag-rake.....	Nov. 15, 1870
98,844	Brown, Elias, Wappinger's Falls, N. Y. Round comb.....	Jan. 18, 1870
4,523	Same.....Tuck-comb.....(Design).....	Dec. 20, 1870
109,801	Brown, Erastus L., Norwich, N. Y. Sash-lock.....	Dec. 6, 1870
109,295	Brown, Felix, New York, N. Y. Machine for cutting loaf-sugar.....	Nov. 15, 1870
109,296	Same.....same.....	Nov. 15, 1870
102,366	Brown, Franklin H., Chicago, Ill. Sewing-machine.....	April 26, 1870
108,964	Brown, Franklin H., assignor to self and Benjamin B. Wiley, Chicago, Ill. Permutation-lock. (Antedated Nov. 5, 1870).....	Nov. 8, 1870
	Brown, F. S. (See Griffin, E. W., assignor.)	
104,702	Brown, George A., Kalamazoo, Mich. Snap-hook.....	June 28, 1870
101,091	Brown, G. C., Atlanta, Ga. Churn.....	Mar. 22, 1870
	Brown, George E. (See Farrar, John N., assignor.)	
	Brown, George H. (See Keane, John, assignor.)	
99,286	Brown, George W., Galesburg, Ill. Seed-planter.....	Feb. 1, 1870
103,292	Same.....New York, N. Y. Hoisting-apparatus.....	May 24, 1870
	Brown, Henry, and Garrettson Smith. (See Smith & Brown, assignors.) (Two cases.)	
107,656	Brown, Henry A., and Ethan B. Keith, Galesburgh, Mich. Coupling-jack.....	Sept. 27, 1870
106,541	Brown, Hiram C., Barkhamsted, Conn. Scythe.....	Aug. 23, 1870
102,218	Brown, Homer, Hamilton, Ill. Oil-stone holder.....	April 26, 1870
102,085	Brown, Isaac W., Jefferson City, Mo. Globe-valve.....	April 19, 1870
	Brown, Jacob H., and John F. Cory. (See Cory & Brown.)	
108,562	Brown, James B., Danbury, Conn. Hat-pouncing machine.....	Oct. 25, 1870
	Brown, James B. (See Hutchinson, Charles B., assignor.) (Two cases.) (Reissue.)	
110,005	Brown, J. Hamilton, assignor to self and Charles E. Ball, New York, N. Y. Gas-lamp.....	Dec. 13, 1870
109,379	Brown, James M., Lynn, Mass. Softening sheep and other skins.....	Nov. 22, 1870
107,438	Brown, James R., Cambridgeport, Mass. Bolt-cutter.....	Sept. 20, 1870
108,321	Same.....Box-scraper. (Antedated Oct. 1, 1870).....	Oct. 18, 1870
108,874	Brown, James T., and Isaac Hird, Cincinnati, Ohio. Automatic furniture-lock.....	Nov. 1, 1870
103,422	Brown, Jesse Bailey, Nashville, Tenn. Printing-press.....	May 24, 1870
105,166	Brown, John C., Washington, D. C. Lathe for turning wood.....	July 12, 1870
108,440	Brown, John L., Connellsville, Pa. Blind for harness-bridles.....	Oct. 18, 1870
100,594	Brown, John S., Schenectady, N. Y. Adjustable-windlass.....	Mar. 8, 1870
106,655	Same.....Seabrook, N. H. Saw-mill dog.....	Aug. 23, 1870
103,423	Brown, Joseph R., New Haven, Conn. Pipe-coupling.....	May 24, 1870
104,551	Brown, J. Warren, Washington, D. C. Combined wood and concrete pavement.....	June 21, 1870
107,219	Brown, Lewis V., Salisbury, N. C. Music-stand.....	Sept. 13, 1870
100,010	Brown, Lorenzo, Odessa, N. Y. Seat-fastener.....	Feb. 22, 1870
102,086	Brown, Lorenzo W., Cleveland, Ohio. Hot-air furnace.....	April 19, 1870
	Brown, Lorenzo W., and Frank M. Campbell. (See Campbell & Brown.)	
	Brown, M. C. (See Knight, Judson, assignor.)	
	Brown, Mary S. (See Lapham, Levi S., assignor.)	
108,322	Brown, Morgan W., New York, N. Y. Box or case to contain bacon, hams, sides, &c.....	Oct. 18, 1870
100,366	Brown, Orrin Lee, Boston, Mass. Type distributing machine.....	Mar. 1, 1870
	Brown, Philo. (See Hendrick, Joseph E., assignor.)	
	Brown, Richard H., <i>et al.</i> (See Gale, L. D., assignor.) (Two cases.) (Reissues.)	
	Same.....(See Rand, Alonzo C., assignor.)	
108,323	Brown, Robert, Detroit, Mich. Elastic-shafting.....	Oct. 18, 1870
110,429	Brown, Robert, Columbus, Miss. Churn-dasher.....	Dec. 27, 1870
	Brown, Robert, <i>et al.</i> (See Battersby, William A., assignor.)	
	Brown, Robert H., <i>et al.</i> (See Abel, William H., assignor.).....(Two cases.)	
108,754	Brown, Royal F., Chicago, Ill. Hot-air furnace.....	Nov. 1, 1870
104,260	Brown, Russell W., Providence, R. I. Needle setter and threader.....	June 14, 1870
101,425	Brown, Silas H., Troy, N. Y. Stop-valve.....	April 5, 1870
	Brown, Tallmadge E. (See Cowing, Turner, assignor.)	
102,762	Brown, Thomas H., Chicago, Ill. Buck-board spring.....	May 10, 1870
101,426	Brown, Thomas S., Poughkeepsie, N. Y. Flask-guide.....	April 5, 1870
	Brown, Thomas S., and John P. Adriance. (See Adriance & Brown.)	
105,545	Brown, Thomas W., assignor to Charles Parker, Boston, Mass. Coffee-mill.....	July 19, 1870
4,130	Same.....Coffee-mill.....(Reissue).....	Sept. 27, 1870
107,439	Brown, Walter, Boston, Mass. Seat for row-boats.....	Sept. 20, 1870
99,551	Brown, William, Thomaston, Conn. Razor-honing machine.....	Jan. 4, 1870
100,115	Same.....Hoboken, N. J. Tube-stopper.....	Feb. 22, 1870
102,367	Same.....Variable cut-off valve-gear and valve.....	April 25, 1870
105,026	Same.....Steam-packing.....	July 5, 1870
106,992	Brown, William and David, England. Rolling-mill.....	Sept. 6, 1870
109,866	Brown, William, England. Friction-roller.....	Dec. 6, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,440	Brown, William, assignor to self and Samuel Noss, Duncannon, Pa. Street-indicator for city cars.....	Sept. 20, 1870
100,253	Brown, William A., Philadelphia, Pa. Washing-machine.....	Mar. 1, 1870
100,971	Brown, William G., Monmouth, Me. Footstool for churches, &c.....	Mar. 22, 1870
102,763	Brown, William H., New York, N. Y. Hoisting-apparatus.....	May 10, 1870
106,993	Brown, William H., Bangor, Me. Pulley-mechanism.....	Sept. 6, 1870
	Brown, William H., <i>et al.</i> (See Bradshaw, Brown & Whithead.)	
4,058	Browne, A. W., assignor to Abraham Burtis, William D. Ludlow, and Mary A. Van Alen, Brooklyn, N. Y. Lamp-burner..... (Reissue)	July 5, 1870
103,324	Browne, Charles A. and Isaac S., North Adams, Mass. Electric blasting-fuse...	Oct. 18, 1870
103,714	Browne, Hamilton, Des Moines, Iowa. Clothes-line holder.....	May 31, 1870
99,832	Browne, John David, Madisonville, Ohio. School-desk.....	Feb. 15, 1870
106,315	Same.....Hinge.....	Aug. 16, 1870
	Browne, J. Marcellus. (See Snodgrass, William, assignor.)	
103,424	Browne, William Livingston, Shortsville, N. Y. Clothes-drier.....	May 24, 1870
103,293	Brownell, Asa C., Brooklyn, N. Y. Combination bath-tub.....	May 24, 1870
105,773	Brownell, Clark, Troy, N. Y. Platform for stoves.....	July 26, 1870
	Brownell, Emerson P., and John F. C. Rider. (See Rider & Brownell.)	
102,911	Browning, Henry, New York, N. Y. Composition for varnish, &c.....	May 10, 1870
107,865	Browning, Joseph, Philadelphia, Pa. Reed-setting machine.....	Oct. 4, 1870
	Browning, Thomas, and Robert Milburn. (See Milburn & Browning.)	
100,494	Brownson, James M., Brooklyn, N. Y. Printing-press.....	Mar. 8, 1870
	Brownson, Walter G., <i>et al.</i> (See Putt, Daniel W., assignor.)	
106,029	Broy, Daniel, Quincy, Ill. Washing-machine.....	Aug. 2, 1870
	Bruce, Cosmore G. (See Hogel, Hascal A., assignor)..... (Two cases.)	
	Bruce, David Wolfe. (See Herriet, Julius, assignor)..... (Two cases.) (Design.)	
	Bruce, James H. (See Schott, Charles, assignor.)	
4,392	Bruce, Robert, assignor to David Wolfe Bruce, Brooklyn, N. Y. Type. (Design)	Oct. 11, 1870
98,918	Bruce, S. W., Laguardo, Tenn. Churn.....	Jan. 18, 1870
4,393	Bruce, Wallace, assignor to David Wolfe Bruce, Brooklyn, N. Y. Type. (Design)	Oct. 11, 1870
106,318	Brücker, Ernst, Old Tappan, N. J. Table.....	Aug. 16, 1870
108,236	Brucek, Otto, New York, N. Y. Spring-fan.....	Oct. 11, 1870
108,681	Same.....Fan.....	Oct. 25, 1870
	Brumback, D. G. (See Jones, William H., assignor.)	
	Brumfiel, Alonzo, and Henry C. McIlwain. (See McIlwain & Brumfiel.)	
4,391	Brummel, Albert, Indianapolis, Ind. Advertising-desk..... (Design)	Oct. 11, 1870
100,254	Brundage, Henry C., Buffalo, N. Y. Iron bridge.....	Mar. 1, 1870
100,851	Brundage, N. L., and B. Downing, Pittston, Pa. Funnel can-filler.....	Mar. 15, 1870
100,720	Bruer, Martin, jr., Fremont, Ohio. Cultivator.....	Mar. 15, 1870
106,994	Brunner, John D., and Edwin R. J. Uberroth, Doylestown, Pa. Grain-separator.	Sept. 6, 1870
109,380	Brunon, Barthelemy, France. Manufacture of wrought metal wheels.....	Nov. 22, 1870
104,418	Brunson, Sterne, Benton Harbor, Mich. Tree-protector.....	June 21, 1870
	Brunswick, Solomon. (See Huber, Joseph, assignor.)	
102,483	Brunton, John, England. Working and locking railway switch and signals....	May 3, 1870
	Brush, George A. (See Salisbury, Elmore J., assignor.)	
109,381	Brush, Joshua N., Eyota, Minn. Butter-worker.....	Nov. 22, 1870
102,087	Bruso, Charles, Worcester, Mass. Box-hook.....	April 17, 1870
107,160	Bruso, Frederick, Buffalo, N. Y. Die for heading bolts.....	Sept. 6, 1870
100,595	Bryan, James, New York, N. Y. Pump.....	Mar. 8, 1870
108,441	Bryan, Norman, assignor to self and Wilson Sawyer, Thomaston, Ga. Hub for carriages	Oct. 18, 1870
	Same.....Attachment to mills.....	Oct. 18, 1870
108,442	Bryan, Norman, Thomaston, Ga. Solar camera.....	Sept. 20, 1870
109,109	Bryan, Parish G., Louisville, Ky. Transposing-scale for teaching music....	Nov. 8, 1870
106,995	Bryan, Thomas Alfred, Baltimore, Md. Flood-bridge.....	Sept. 6, 1870
106,656	Bryan, William W., Schaghticoke, N. Y. Grain-fork.....	Aug. 23, 1870
101,092	Bryant, Abner H., Chicago, Ill. Egg-carrier.....	Mar. 22, 1870
101,093	Same.....same.....	Mar. 22, 1870
104,261	Same.....same.....	June 14, 1870
3,971	Bryant, James S., Hartford, Conn. Blotting-pad..... (Design)	April 12, 1870
98,738	Bryant, Mertoun C., deceased, by Caroline Bryant, administratrix, assignor to William J. Towne, Newtonville, Mass. Circular loom.....	Jan. 11, 1870
104,824	Bryant, S. R., Waterford, Pa. Hollow metallic rim or felly.....	June 28, 1870
102,434	Bryant, William M., Alexandria, Va. Preparing the pith of cornstalks for use in the arts.....	May 3, 1870
3,855	Bryce, John, Pittsburgh, Pa. Ornamenting glassware..... (Design)	Feb. 22, 1870
	Same..... (See McCord, John, assignor.)	
98,552	Bryson, James D., and William R. Dunlap, Newcastle, Pa. Water-wheel.....	Jan. 4, 1870
99,833	Bryson, Robert, Schenectady, N. Y. Hay-tedder.....	Feb. 15, 1870
	Same.....Machine for husking corn..... (Extension)	Dec. 7, 1870
108,563	Buchanan, Alexander F., East Newark, N. J. Oil-cloth-printing machinery...	Oct. 25, 1870
110,197	Buchanan, David, Philadelphia, Pa. Pew-shelf.....	Dec. 20, 1870
104,703	Buchanan, George, Washington, Pa. Combined hearth-grate and fender.....	June 28, 1870
109,802	Buchanan, James, Detroit, Mich. Apparatus for evaporating brine and other liquids.....	Dec. 6, 1870
107,866	Buchanan, Joseph R., Louisville, Ky. Manufacture of salt.....	Oct. 4, 1870
99,834	Buchanan, M. H., Washington County, Va. Bridle.....	Feb. 15, 1870
109,582	Buchberger, Leopoldin, Chicago, Ill. Arm-support for keyed instruments. (Antedated Nov. 12, 1870).....	Nov. 29, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,764	Buckholz, Gustav Adolph, England. Hulling-machine.....	May 10, 1870
103,102	Same..... Manufacture of semolino and flour.....	Oct. 11, 1870
103,103	Same..... same.....	Oct. 11, 1870
105,418	Buck, Addison, Hebron, Ind. Hay-loader.....	July 19, 1870
103,682	Buck, Isaiah D., Conshohocken, Pa. Piston.....	Oct. 25, 1870
100,495	Buck, S. B., Elyria, Ohio. Corn-planter.....	Mar. 8, 1870
105,546	Same..... Carriage-wheel.....	July 19, 1870
101,820	Buck, Solon K., and Justus D. Luther. (See Luther & Buck.) Buckley, Chauncey, assignor to Charles Parker, Meriden, Conn. Spectacle- frame.....	April 12, 1870
98,739	Buckley, Edward M., Amenia Union, N. Y. Water-wheel.....	Jan. 11, 1870
98,469	Buckley, Thomas, New York, N. Y. Chandelier.....	Jan. 4, 1870
107,442	Buckman, Edward and Alexander, Brooklyn, N. Y. Toy-gun.....	Sept. 20, 1870
103,104	Same..... Mouse-trap. (Antedated Sept. 30, 1870).....	Oct. 11, 1870
	Buckman, George A., and Samuel J. Moore. (See Moore & Buckman.) Buckman, George W. (See Marr, Alfred, assignor.)	
100,496	Buckman, Ira, jr., Williamsburgh, N. Y. Fruit-jar.....	Mar. 8, 1870
	Buckman, John H. (See Reinshagen, Peter W., assignor)..... (Two cases.) Buckman, John H., et al. (See Reinshagen, Peter W., assignor.) Same..... (See Wiehl, Daniel, assignor.)	
99,397	Buckwalter, Cyrus, Davenport, Iowa. Harvester-rake.....	Feb. 1, 1870
103,875	Buckwalter, Henry L., Limerick Township, Pa. Try-square and level.....	Nov. 1, 1870
	Buckwalter, H. L. and J. A. (See Smith & Brower, assignors.) (Two cases.) (De signs.)	
102,912	Budd, James Palmer, Wales. Manufacture of iron and steel.....	May 10, 1870
103,755	Budd, John C., New York, N. Y. Muff, collar, and cuff box.....	Nov. 1, 1870
102,088	Buel, Ebenezer, Silver Creek, N. Y. Capstan.....	April 19, 1870
	Buell, Charles A., administrator. (See Barton, Jason)..... (Extension.) Buell, Ira B. (See Randall, Francis W., assignor.) Buell, Leander. (See Austin, Phineas E., assignor.)	
99,755	Buell, W. H., Laughantown, Pa. Folding-bedstead.....	Feb. 15, 1870
104,552	Buell, William H., Union City, Mich. Clothes-drier.....	June 21, 1870
	Buerk, Jacob E. (See Burk, John, assignor.)..... (Reissue.) Buffalo & Niagara Scale Works Company. (See Usher, John H., assignor.)	
101,706	Buffington, M. C., La Harpe, Ill. Corn-plow.....	April 12, 1870
104,419	Buffington, Nathaniel E., assignor to self, John Rich, and Lysander Flagg, North Providence, R. I. Clothes-line holder and stretcher.....	June 21, 1870
	Buffum, Charles. (See Johnson, Joseph B., assignor)..... (Reissue.) Buffum, David, et al. (See Wells, William, assignor.) Buffum, Montraville, Leominster, Mass. Watch-chain..... (Design)	April 19, 1870
3,975	Bujac, Matthew Julius. (See Bennett, Silvester, assignor.)	
100,721	Bulger, James, Port Sherman, Mich. Faucet.....	Mar. 15, 1870
103,973	Bulgin, William G., Vienna, N. J. Chair-seat.....	June 7, 1870
	Bulkley, Frederick C. (See Cooke, Sydney, assignor.) Bulkley, Henry W., New York, N. Y. Machine for flocking wall-paper, show- cards, &c.....	July 26, 1870
106,317	Bull, Buckland W., New York, N. Y. Device for leveling billiard and other tables, &c.....	Aug. 16, 1870
102,089	Bull, Jeremiah N., Springfield, Mass. Spring bed-bottom. (Antedated March 31, 1870).....	April 19, 1870
109,172	Bull, Ole, New York, N. Y. Piano.....	Nov. 15, 1870
4,468	Same..... same..... (Design).....	Nov. 15, 1870
98,845	Bulla, Milton V., and J. Benjamin Birdsell, South Bend, Ind. Washing-machine.....	Jan. 18, 1870
109,382	Bulla, Milton V., South Bend, Ind. Clothes-holder for clothes-lines. (Antedated Nov. 12, 1870).....	Nov. 22, 1870
99,398	Bullard, John, Hyde Park, Vt. Miter-box.....	Feb. 1, 1870
110,006	Same..... North Hyde Park, Vt. Adjustable shackle for carriage-springs.....	Dec. 13, 1870
106,253	Bullard, Ransom, and George E. Mills, Litchfield, Mich. Pruning-shears.....	Aug. 9, 1870
109,492	Bullivant, Josiah, assignor to Samuel W. Jamison and William J. Dudley, New- ark, N. J. Fastening for blocks of lasts.....	Nov. 22, 1870
103,443	Bullivant, Thomas, England. Window.....	Oct. 18, 1870
107,443	Bullock, Edmund L., Hartford, Conn. Washing-machine.....	Sept. 20, 1870
	Bullock, Milan C. (See Case, George F., assignor.) Bullock, William, deceased, by Richard Vose, administrator, Philadelphia, Pa. Rotary paper-cutting machine. (Antedated Feb. 23, 1870).....	Mar. 1, 1870
100,367	Same..... Machine for planing and squaring the edges of segmental stereo- type plates. (Antedated Feb. 23, 1870).....	Mar. 1, 1870
98,919	Bullough, John, South Bend, Ind. Power-loom.....	Jan. 18, 1870
100,852	Bundy, E. C., Onconta, N. Y. Portable beer-cooler.....	Mar. 15, 1870
109,174	Bundy, Lewis, Mooer's Forks, N. Y. Plano.....	Nov. 15, 1870
103,444	Bunn, William T., Humboldt, Tenn. Plow.....	Oct. 18, 1870
102,765	Bunnell, Isaac S., Carbondale, Pa. Culinary-boiler.....	May 10, 1870
103,876	Bunnell, John N., Unionville, Conn. Mouse-trap.....	Nov. 1, 1870
109,667	Same..... Ice ax and pick. (Antedated Nov. 25, 1870).....	Dec. 6, 1870
	Buntan, William. (See Jope, George W., assignor.) Buntan, William, and George W. Jope. (See Jope & Buntan.) Buoy, Dennis, Danville, Pa. Weighing-scale.....	Jan. 25, 1870
99,148	Burbank, Abner, assignor to self, Henry S. Joy, and George D. Williams, Ro- chester, N. Y. Lamp.....	May 17, 1870
101,350	Burcham, Jackson G., Noblesville, Ind. Harrow.....	Mar. 29, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,542	Burchfield, John G., and Seth W. Brock, assignors to Seth W. Brock, Niantic, Ill. Combination of shaft and pole.....	Aug. 23, 1870
107,755	Burdett, Riley, Chicago, Ill. Reed-board for organs.....	Sept. 27, 1870
100,369	Burdick, A. R., Racine, Wis. Stove-pipe damper and ventilator.....	Mar. 1, 1870
99,835	Burdick, Hiram, Monroe, Wis. Grain-separator.....	Feb. 15, 1870
100,972	Burdick, James M., Ilion, N. Y. Hay-tedder.....	Mar. 22, 1870
105,775	Burdick, Welcome J., assignor to self and Joel F. Mourhess, Alfred, N. Y. Harrow.....	July 26, 1870
108,105	Burden, James C., Ladoga, Ind. Stove-fastener.....	Oct. 11, 1870
108,002	Burdin, Luther E., Paris, Ky. Subsoil pulverizing attachment for plows.....	Oct. 4, 1870
99,399	Burditt, William and George H., Boston, Mass. Fire-escape.....	Feb. 1, 1870
105,419	Burdon, David P., New York, N. Y. Leather-scouring machine.....	July 19, 1870
	Burdon, David P., and Hector C. Havemeyer. (See Havemeyer & Burdon.)	
4,024	Burdon, William, Brooklyn, N. Y. Steam-radiator..... (Design) ..	May 17, 1870
	Burdwin, John W., and George S. Tillinghast. (See Tillinghast & Burdwin.)	
99,836	Burgess, Oscar S., sr., Battle Creek, Mich. Washing-machine.....	Feb. 15, 1870
107,756	Burgess, Charles, Rochester, N. Y. Cement walk, pavement, and road.....	Sept. 27, 1870
109,868	Burgess, George G., Grafton, Ohio. Combined rule, level, square, and dividers. (Antedated Nov. 26, 1870).....	Dec. 6, 1870
102,766	Burgess, Hubert, Oakland, Cal. Pencil-sharpener.....	May 10, 1870
107,444	Burgess, John A., assignor to self and Joshua Standish, Plymouth, Mass. Hoisting-grapple.....	Sept. 20, 1870
103,294	Burgess, Josiah, Zanesville, Ohio. Sad-iron heater.....	May 24, 1870
104,693	Burgess, Thomas J., Rondout, N. Y. Corn-husking machine.....	June 23, 1870
101,222	Burgess, Warren S., and George A. Lenzi, Morristown, Pa. Apparatus for cutting photographic prints.....	Mar. 29, 1870
105,037	Burget, David S., Martinsburgh Borough, Pa. Beehive.....	July 5, 1870
103,295	Burghardt, Frederick, Curtisville, Mass. Adjustable coupling for journals, axles, &c.....	May 24, 1870
105,420	Burghardt, William Henry, Curtisville, Mass. Weather-strip.....	July 19, 1870
99,837	Burgin, Thomas, Rutland, Vt. Curtain-fixture.....	Feb. 15, 1870
106,319	Burhams, Denslow, Burlington, Iowa. Maching for making match-splints.....	Aug. 16, 1870
	Burk, Charles E., and Thomas Robin. (See Robin & Burk.)	
3,869	Bürk, John, assignor to Jacob Buerk, Boston, Mass. Watchman's time-detector. (Reissue).....	Mar. 8, 1870
106,030	Burke, Andrew, New York, N. Y. Boot and shoe.....	Aug. 2, 1870
104,262	Burke, Andrew J., assignor to self and Joseph B. Merrow, Mansfield, Conn. Grinding-attachment for carding-machines.....	June 14, 1870
	Burke, Edmund. (See Kenerson, James M., assignor.)	
107,867	Burke, John K., Rochester, N. Y. Casting valve chambers and seats.....	Oct. 4, 1870
98,553	Burke, John M., Dansville, N. Y. Bag-holder.....	Jan. 4, 1870
	Burke, Martin K., and John D. Ross. (See Ross & Burke.)	
99,149	Burke, William, Brooklyn, N. Y. Die-press.....	Jan. 25, 1870
4,156	Burke, William A., assignor to proprietors of the Tremont Mill, Lowell, Mass. Trade-mark..... (Design) ..	June 21, 1870
101,707	Burkert, John Joseph, New York, N. Y. Tin can.....	April 12, 1870
103,426	Burket, George, and Samuel Lantz, Ada, Ohio. Dumping-wagon.....	May 24, 1870
99,838	Burket, John H., and George, Bluffton, Ohio. Head-block for saw-mills.....	Feb. 15, 1870
	Burkhardt, H., et al. (See Eberweiser, John, assignor.)..... (Reissue.)	
	Burleigh, Charles, Georgetown, Colorado Ter. Gearing for feed-rollers of planing-machines..... (Extension) ..	Feb. 10, 1870
	Burleigh, Charles, and Charles H. Brown. (See Brown & Burleigh.) (Extension.)	
102,767	Burleigh, Micajah C., Somerworth, N. H. Heating-stove.....	May 10, 1870
105,167	Same..... Damper.....	July 12, 1870
4,226	Same..... Great Falls, N. H. Stove door and panel..... (Design) ..	July 19, 1870
106,116	Same..... Somerworth, N. H. Mechanism for actuating the picker-staff in looms.....	Aug. 9, 1870
106,543	Same..... Let-off mechanism for looms.....	Aug. 23, 1870
	Burlew, Abram, and George Heliker. (See Heliker & Burlew.)	
99,150	Burnap, Nelson C., Argusville, N. Y. Milk-pan.....	Jan. 25, 1870
103,558	Same..... Dinner-pail and lantern.....	May 31, 1870
107,868	Burnell, Levi, Milwaukee, Wis. Hoisting-apparatus.....	Oct. 4, 1870
107,869	Same..... Nursery-footstool.....	Oct. 4, 1870
109,110	Same..... Drawer for cabinet furniture.....	Nov. 8, 1870
	Burnett, George G., et al. (See Samuels, John L., assignor.)..... (Reissue.)	
104,694	Burnett, W. C., Burns' Mills, Pa. Line-spreader.....	June 23, 1870
	Burnham, George E., et al. (See Powers, Thomas H., assignor.)	
106,657	Burnham, Moses, 2d, Wenham, Mass. Heel-burnisher.....	Aug. 23, 1870
100,497	Burns, Elizabeth A., Meadow Lake, Cal. Desulphurizing ore.....	Mar. 8, 1870
99,151	Burns, James William, Medway, Ohio. Curtain and map fixture.....	Jan. 25, 1870
103,296	Burns, Leander, Port Chester, N. Y. Die for forming carriage-steps.....	May 24, 1870
108,445	Burns, Miles S., Memphis, Tenn. Cotton-seed planter.....	Oct. 18, 1870
	Burns, P. (See Seibold, Severin, assignor.)..... (Two cases.)	
103,004	Burns, Peter, Syracuse, N. Y. Seat for harness-saddles.....	May 10, 1870
99,839	Burns, W. H., Unionville, Mo. Boiler, furnace, and flue.....	Feb. 15, 1870
99,152	Burns, W. H., assignor to Jonathan Luther, Grafton, Mass. Roller jaw-temple for looms.....	Feb. 1, 1870
99,287	Same..... Shuttle for looms.....	Feb. 1, 1870
109,583	Same..... Roller-temple for looms.....	Nov. 29, 1870
	Burpee, Samuel J., and William M. Phelps. (See Phelps & Burpee.)	
100,973	Burr, Bradley, Batavia, Ill. Carriage-wheel hub.....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,421	Burr, Horatio A., Mansfield, Ohio. Miter-box.....	July 19, 1870
103,446	Burr, Joseph A., assignor to Burr & Co., Brooklyn, N. Y. Hoisting-block.....	Oct. 18, 1870
4,215	Same.....same..(Reissue).....	Dec. 27, 1870
106,776	Burr, S. M., <i>et al.</i> (See Bond, Thomas, assignor.) Burr, Sanford S., Boston, Mass. Wardrobe-bedstead.....	Aug. 30, 1870
100,370	Burr, William H. (See Knowlton, John L., assignor.) Burrell, Edward. (See Berry, Leander, assignor.).....(Two cases.)	Mar. 1, 1870
109,493	Burress, Peter, Braidwood, Ill. Spring wagon-seat.....	Nov. 22, 1870
105,038	Burress, Peter, and Conrad Chize, Braidwood, Ill. Wrench.....	July 5, 1870
103,974	Burridge, Thomas H., St. Louis, Mo. Apparatus for treating oil.....	June 7, 1870
101,094	Burridge, William H., assignor to A. L. Kingman, C. G. Dodge, and H. C. Hartwell, Cleveland, Ohio. Compound for preventing and removing incrustation in steam-boilers.....	Mar. 22, 1870
99,840	Burrill, Edgar D., Providence, R. I. Medical compound.....	Feb. 15, 1870
102,368	Burroughs, George A., Providence, R. I. Teasel-grading machine. (Antedated Feb. 10, 1870).....	April 26, 1870
108,965	Burroughs, Caleb C., <i>et al.</i> (See Whitmore, Seth H., assignor) ... (Two cases.) Burrows, Edmund F., Mystic River, Conn. Shuttle for loom.....	Nov. 8, 1870
107,594	Burrows, John E., Newark, N. J. Apparatus for cooling the vapors of oxide of zinc.....	Sept. 20, 1870
106,595	Burson, George, East Palestine, Ohio. Hand corn-planter.....	Sept. 20, 1870
108,003	Same.....same.....	Oct. 4, 1870
103,297	Burson, W. W., and John Nelson, Rockford, Ill. Knitting-machine. (Antedated Sept. 30, 1870).....	May 24, 1870
107,445	Burt, Calvin C., assignor to Gardner Herriek, Jackson, Mich. Gas-heater.....	Sept. 20, 1870
108,564	Burt, George E., and Edwin A. Hildreth, Harvard, Mass. Broom-corn seed-stripper.....	Oct. 25, 1870
101,223	Burt, George E., Harvard, Mass. Link for endless-chain horse-powers..... Burt, Grinnell, <i>et al.</i> (See Green, Melvin R., assignor.) Burt, Leonard H. (See Bassett, Marshall L., assignor.)	Mar. 29, 1870
106,544	Burtenshaw, A., Hope Furnace, Ohio. Hot-blast furnace.....	Aug. 23, 1870
106,545	Burtis, Abraham, <i>et al.</i> (See Browne, A. W., assignor).....(Reissue.)	Feb. 1, 1870
99,400	Burnett, William B., New York, N. Y. Paint-brush.....	June 7, 1870
103,841	Same.....Ferrule for paint-brushes.....	July 5, 1870
104,928	Burton, A. G., Rochester, N. Y. Lock-spindle for safes.....	Feb. 22, 1870
100,011	Burton, Stephen J., assignor to American Steam Fire-Proof Safe Company, Charlestown, Mass. Bolting-device for safes.....	Feb. 8, 1870
99,632	Burton, Watkins Leigh, Richmond, Va. Circuit-charger.....	Nov. 1, 1870
103,877	Burton, William. (See Caldwell, Samuel N., assignor.) Bury, William A., Crosse Isle, Mich. Reclining-chair.....	May 24, 1870
103,427	Buschmann, Leopold F., New York, N. Y. Railway-car coupling.....	Aug. 9, 1870
106,117	Bush, Alonzo M., and Joseph B. Wakeman. (See Wakeman & Bush.) Bush, Arthur W., St. Cloud, Minn. Watch-makers' vise.....	May 10, 1870
102,768	Bush, Jacob, Darien, Wis. Broom-corn seed-planter.....	Sept. 13, 1870
107,332	Bush, James H., Bengal, Mich. Milk-safe.....	Feb. 15, 1870
99,841	Bush, Richard, Brooklyn, N. Y. Rotary-pump.....	Jan. 11, 1870
98,664	Bush, Talmon C., New Haven, Conn. Button-hole cutter.....	Nov. 15, 1870
109,297	Bushfield, S. B., Parkersburgh, West Va. Slate-frame.....	Aug. 23, 1870
4,103	Bushman, Eli, and John A. Walter. (See Walker & Bushman.) Bushnell, Corydon L., Jefferson, Ohio. Cane and whip combined.....	Oct. 18, 1870
108,325	Same.....Cherry Valley, Ohio. Combined cane and whip. (Antedated Nov. 5, 1870).....	Oct. 18, 1870
106,118	Bushnell, Edwin L., Poughkeepsie, N. Y. Spring-mattress.....	Dec. 13, 1870
4,202	Same.....Bed-bottom.....	Oct. 18, 1870
108,448	Buss, Charles, Marlborough, N. H. Lathe-dog.....	Oct. 18, 1870
99,529	Bussell, Erastus T., assignor through mesne assignments to self, John N. Greene, and J. M. Tilford, Indianapolis, Ind. Cultivator and harrow.....	Aug. 9, 1870
3,815	Bussell, Erastus T., assignor to the National Spring Company, Indianapolis, Ind. Combined India-rubber and steel spring.....(Reissue.)	Dec. 13, 1870
103,559	Bussey, A. P., Westernville, N. Y. Milk and liquid cooler.....	Oct. 18, 1870
102,090	Bussey, Esek, Troy, N. Y. Water-reservoir for cooking-stoves.....	Feb. 8, 1870
99,756	Bussey, Esek, assignor to self and Charles A. McLeod, Troy, N. Y. Cooking-stove.....(Reissue.)	Feb. 1, 1870
106,777	Butch, Leonard C., Lancaster, Ohio. Bell for clocks.....	May 31, 1870
102,769	Butcher, Robert H. (See Field, George W., assignor.) Butler, Cephas, and David Pitcairn Wright. (See Wright & Butler.)	April 19, 1870
100,596	Butler, Charles E., Hudson, N. Y. Adjustable hollow drill.....	Feb. 15, 1870
100,722	Butler, Ebenezer, Salina, N. Y. Slate-frame.....	Aug. 30, 1870
101,224	Butler, E. Frederick, and Charles W. Holbrook. (See Holbrook & Butler.) Butler, Francis C., <i>et al.</i> (See Ward, Eugene, assignor.) Butler, Henry L., and Thomas A. Christie, said Christie assignor to said Butler, Pittsburgh, Pa. Steam-engine.....	May 10, 1870
104,108	Butler, James C., Albany, N. Y. Sofa-bedstead.....	Mar. 8, 1870
	Butler, James D., Lancaster, Mass. Let-off tension-device for spools of braiding-machines. (Antedated February 26, 1870).....	Mar. 15, 1870
	Butler, James H., Hampden, Me. Machine for sawing lath. (Antedated March 1, 1870).....	Mar. 29, 1870
	Butler, James J. (See Waters, Gardner, assignor.) Butler, John, New York, N. Y. Coupling for connecting the inlet-pipe to the retort of a gas-machine.....	June 14, 1870
	Butler, John G., Fort Leavenworth, Kans. Projectile for ordnance.....	
	Butler, John Wilson. (See Williams, John De Witt, assignor.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Butler, Joseph C., <i>et al.</i> (See Danks, Samuel, assignor.)	
107,004	Butler, Manlove, Vernon, Ind. Plow	Oct. 4, 1870
104,263	Butler, William H., assignor to Valentine and Butler Safe and Lock Company, New York, N. Y. Safe-deposit box	June 14, 1870
106,463	Butler, William M., Louisville, Ky. Dentists' chair	Aug. 16, 1870
	Butterfield, E. L., trustee. (See Diebold, Charles, assignor.)	
108,326	Butterfield, John C., and James Hay, Chicago, Ill. Trip-hammer	Oct. 18, 1870
99,288	Butterfield, M. K., Eddyville, N. Y. Fence-post	Feb. 1, 1870
104,264	Butterfield, Spicer R., assignor to self and Sylvester J. Taylor, Rome, N. Y. Bolt-holder	June 14, 1870
100,498	Butterfield, William, assignor to self and Thomas Ellwood Roberts, Boston, Mass. Crimping-machine	Mar. 8, 1870
104,265	Butterfield, William, assignor to self and William H. Worden, Madison, Wis. Low-water indicator	June 14, 1870
101,578	Butterworth, William H., Trenton, N. J. Thrashing-machine	April 5, 1870
99,153	Buttles, C. A., Milwaukee, Wis. Steam-generating heater	Jan. 25, 1870
103,975	Buttles, Reuben P., Mansfield, Pa. Tool-holder	June 7, 1870
101,981	Buttles, Reuben P., and Salmon Sweet, Mansfield, Pa. Turning-chisel	April 19, 1870
103,012	Button, Alphonzo, Dunkirk, N. Y. Medicine-case	May 17, 1870
106,546	Same. Seeding-machine	Aug. 23, 1870
4,251	Button, Congers, Philadelphia, Pa. Stocking-fabric. (Design)	July 19, 1870
	Same. (See Shaw, James, assignor.)	
	Button, John W., <i>et al.</i> (See Thomas, David W., assignor) (Design.)	
105,168	Buttrill, Lucy J., Jackson, Ga. Medical compound	July 12, 1870
	Butts, A. H., jr., <i>et al.</i> (See Frey, Franklin, assignor.)	
108,565	Butts, Albert M., Waterbury, Conn. Snow-plow	Oct. 25, 1870
	Butts, Isaac, <i>et al.</i> (See Fickett, Albert, assignor.)	
102,770	Buxton, Benjamin F., West Randolph, Vt. Wrench	May 10, 1870
106,320	Buxton, John E., Owatonna, Minn. Combined drill and seeding-machine	Aug. 16, 1870
	Buxton, Levi W., and John P. Greeley. (See Greeley & Buxton.) (Reissue.)	
103,715	Buys, Edward, New York, N. Y. Cooking-stove	May 31, 1870
101,579	Buzby, John, Moorestown, N. J. Water-wheel	April 5, 1870
98,920	Buzzell, John G., Lynn, Mass. Carriage-wheel	Jan. 18, 1870
108,327	Byard, David, Sharon, Pa. Rotary grate-bar. (Antedated October 4, 1870)	Oct. 18, 1870
110,198	Byrd, Isaiah and Turner, jr., Calvin Township, Mich. Vise	Dec. 20, 1870
110,430	Same. Saw-teeth	Dec. 27, 1870
	Byerly, Jacob. (See Fitzhugh, Benjamin G., assignor.)	
100,974	Byland, John F., Walton, Ky. Corn-planting attachment for plows	Mar. 22, 1870
107,333	Byrd, Harvey L., Baltimore, Md. Awning and fan for horses' heads	Sept. 13, 1870
3,846	Byrne, George Joseph, New York, N. Y. Bottle. (Design)	Feb. 15, 1870
3,847	Same. same. (Design)	Feb. 15, 1870
3,848	Same. same. (Design)	Feb. 15, 1870
	Byrne, George P., <i>et al.</i> (See Stephenson, Thompson, and Greaves, assignors.)	
109,869	Byrne, Thomas, New York, N. Y., and Diedrich Strunk, Lavaca County, Texas, assignors to selves and J. J. Schott. Insect-destroyer	Dec. 6, 1870
100,371	Cabell, S. G., Washington, D. C. Fluting-machine	Mar. 1, 1870
107,657	Same. same	Sept. 27, 1870
3,856	Cabell, Samuel G., assignor to Flora B. Cabell, Quincy, Ill. Crimping-machine. (Reissue)	Mar. 1, 1870
100,255	Cabell, S. G., and A. Q. Ross, Quincy, Ill. Hydrant	Mar. 1, 1870
	Cachal, Leonce, <i>et al.</i> (See Sauer & Cachal.)	
101,427	Cade, George, Long Branch, N. J. Lamp-wick feeder	April 5, 1870
99,154	Cady, B. F., Chittenango, N. Y. Implement for slitting and joining rags for carpets	Jan. 25, 1870
103,298	Cady, Ebenezer H., Grand Rapids, Mich. Barrel	May 24, 1870
102,914	Cady, Edson P., Trenton, Wis. Dropping-platform for harvesters	May 10, 1870
104,420	Cady, George W., Providence, R. I. Door-knob	June 21, 1870
	Cady, Henry W., and De Witt C. Clark. (See Clark & Cady.)	
105,636	Cahill, Mortimer, Kalamazoo, Mich. Spring bed-bottom. (Antedated July 14, 1870)	July 26, 1870
	Cailliet, Ferdinand Louis Felix, and Jules César Houel. (See Houel & Cailliet.)	
102,485	Cain, Cornelius H., Dayton, Ohio. Feed-cutter	May 3, 1870
99,401	Callahan, Edward A., Brooklyn, N. Y. Printing-telegraph	Feb. 1, 1870
3,810	Callahan, Edward A., assignor to the Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph. (Reissue)	Jan. 25, 1870
107,658	Caldwell, Andrew, Lexington, Ky. Ageing spirits	Sept. 27, 1870
100,012	Caldwell, A. B., Syracuse, N. Y. Umbrella	Feb. 22, 1870
107,161	Caldwell, David B., assignor to self and John H. McGowan, Cincinnati, Ohio. Steam-engine	Sept. 6, 1870
102,915	Caldwell, James Marshall, and George Worthington, Burlington, N. J. Indelible writing fluid or ink	May 10, 1870
110,545	Caldwell, John W., Cincinnati, Ohio. Combined immersion and steam bath	Dec. 27, 1870
109,584	Caldwell, Major Robert W., Jackson, Ohio. Corn-dropper	Nov. 29, 1870
105,902	Caldwell, Samuel N., assignor to self and William Burton, Pilot Grove, Ind. Grading and ditching plow	Aug. 2, 1870
102,771	Caldwell, Walter, Bryan, Ohio. Fall-leaf table	May 10, 1870
110,199	Calef, Joseph W., assignor to self, Harvey King, and Augustus Peabody, Boston, Mass. Implement. (Antedated Dec. 10, 1870)	Dec. 20, 1870
	Calely, Edward, and John R. Rose. (See Rose & Calely.) (Three cases.) (Design.)	
99,842	Calhoun, N. W., Upper Tract, West Va. Washing-machine	Feb. 15, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
98,846	Calkins, Abbott C. ( <i>See</i> Bowden, William, assignor.)	
98,554	Call, Horace, assignor to self and J. B. Rand, Concord, N. H. Apparatus for transmitting power by the medium of air.....	Jan. 18, 1870
	Call, William R., and Thaddeus F. Griffin, Gloucester, Mass. Medical compound.....	Jan. 4, 1870
107,757	Callaghan, James. ( <i>See</i> Marsh, Thomas, assignor.)	
98,921	Callahan, Timothy O., Boston, Mass. Plane.....	Sept. 27, 1870
	Callahan, W. P., and D. R. De Rush, Dayton, Ohio. Cotton-seed huller.....	Jan. 18, 1870
	Callaway, John E., and John F. Hanson. ( <i>See</i> Hanson & Callaway.)	
108,328	Callender, Mills L., Brooklyn, N. Y. Superheater for gas-works, &c.....	Oct. 18, 1870
105,637	Calley, Benjamin F., Saugus, Mass. Design-die for ornamenting.....	July 26, 1870
100,597	Calliham, James, assignor to David M. Calliham, Baton Rouge, La. Ditching-machine.....	Mar. 8, 1870
104,929	Callow, John J., Cleveland, Ohio. Method of graining.....	July 5, 1870
106,547	Calnan, John B., assignor to self and Varanus P. Parkhurst, New Haven, Conn. Device for propelling canal-boats.....	Aug. 23, 1870
103,013	Calver, George W. H., Burlington, N. J. Revolving fire-arm.....	May 17, 1870
110,339	Calvert, Charles A., England. Fare-registering apparatus.....	Dec. 20, 1870
102,486	Cameron, Adam Scott, New York, N. Y. Direct-acting engine.....	May 3, 1870
	Cameron, J. C. ( <i>See</i> Hull, Abraham C., assignor.)	
105,903	Cameron, Walter E., Taunton, Mass. Folding-chair.....	Aug. 2, 1870
4,269	Same.....Arm-chair.....(Design).....	Aug. 2, 1870
107,870	Same.....Hose-bridge.....	Oct. 4, 1870
104,421	Cammerer, David, Cincinnati, Ohio. Apparatus for agitating and cooling barrels and casks during the process of pitching.....	June 21, 1870
103,137	Camp, Charles L., and John H. Chappell, Brooklyn, N. Y. Milk-can.....	May 17, 1870
99,402	Camp, M. M., assignor to self, D. Goffe Phipps, and E. I. Foote, New Haven, Conn. Machine for forming sheet-metal tubing.....	Feb. 1, 1870
	Camp, Mortimer M. ( <i>See</i> Phipps, D. Goffe, assignor.)	
103,976	Camp, Samuel R. P., New York, N. Y. Combined liquid gauge and hydrometer.....	June 7, 1870
103,977	Same.....Computing spring-balance.....	June 7, 1870
	Camp, Warren W. ( <i>See</i> Bonine, Lot, assignor.)	
99,530	Campaigne, Arthur, <i>et al.</i> ( <i>See</i> Smith, Greely & Campaigne.)	
	Campbell, Alexander, assignor to Samuel S. Wilson, Charlestown, Mass. Puncturing and tubular stoppers for sealed cans.....	Feb. 8, 1870
110,546	Campbell, Alexander McDonald, assignor to self, Charles M. Bolon, and Frederick K. Day, Newark, N. J. Bridge.....	Dec. 27, 1870
108,566	Campbell, Alonzo C., New York, N. Y. Asphalt pavement.....	Oct. 25, 1870
100,598	Campbell, Andrew, Brooklyn, N. Y. Printing-press.....	Mar. 8, 1870
105,638	Same.....Gauge for printing-press.....	July 26, 1870
105,640	Campbell, Benjamin F., and Charles Whittier, Boston, Mass. Steam-heater.....	July 26, 1870
	Campbell, Caleb C., and Peter Houseman. ( <i>See</i> Houseman & Campbell.)	
	Campbell, Charles, <i>et al.</i> ( <i>See</i> Allen, Edwin F., assignor.)	
	Campbell, Colin. ( <i>See</i> Sheldon, Alexander J., assignor.)	
105,639	Campbell, Daniel, assignor to Henry Seymour & Company, Elizabeth, N. J. Sheep-shears.....	July 26, 1870
107,871	Campbell, Daniel, and William Saul, Elizabeth, N. J. Wrench.....	Oct. 4, 1870
110,431	Campbell, Duncan H., Scotland, and Erastus Woodward, Charlestown, Mass. Wire for making pegs for boots and shoes.....	Dec. 27, 1870
109,383	Campbell, Frank W., and Lorenzo W. Brown, Cleveland, Ohio. Tinner's fire-pot. (Antedated Nov. 9, 1870.).....	Nov. 22, 1870
100,975	Campbell, George, North Buffalo, N. Y. Forge.....	Mar. 22, 1870
105,201	Campbell, James, Rochester, N. Y. Water-wheel.....	July 12, 1870
3,836	Campbell, James, assignor to self and William Campbell, Harrison, Ohio. Corn-planter.....(Reissue).....	Feb. 15, 1870
105,547	Campbell, James A., assignor to self, John W. Ribble, and P. Phares, Rockingham County, Va. Fruit and alcohol still.....	July 19, 1870
100,256	Campbell, J. B., Cincinnati, Ohio. Spring bed-bottom.....	Mar. 1, 1870
103,842	Campbell, James C., New York, N. Y. Refrigerator.....	June 7, 1870
109,494	Campbell, James W., New York, N. Y. Gluing-hopper.....	Nov. 22, 1870
107,659	Campbell, John, and Addison Watson, London, Ohio. Flood-gate.....	Sept. 27, 1870
	Campbell, John J. ( <i>See</i> Gould, Jacob H., assignor.)	
	Campbell, Joseph, and Seymour Raymond. ( <i>See</i> Flansburg, John D., assignor.) (Design.)	
105,302	Campbell, Martin P., Barrington, N. Y. Saw-mill.....	July 12, 1870
	Campbell, Richard. ( <i>See</i> Wilson, John C., assignor.) (Design.)	
3,976	Campbell, Robert R., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet-pattern.....(Design).....	April 19, 1870
4,081	Same.....same.....(Design).....	May 31, 1870
4,082	Same.....same.....(Design).....	May 31, 1870
4,083	Same.....same.....(Design).....	May 31, 1870
4,084	Same.....same.....(Design).....	May 31, 1870
4,324	Same.....same.....(Design).....	Sept. 6, 1870
4,325	Same.....same.....(Design).....	Sept. 6, 1870
4,326	Same.....same.....(Design).....	Sept. 6, 1870
4,327	Same.....same.....(Design).....	Sept. 6, 1870
4,328	Same.....same.....(Design).....	Sept. 6, 1870
4,329	Same.....same.....(Design).....	Sept. 6, 1870
4,330	Same.....same.....(Design).....	Sept. 6, 1870
4,331	Same.....same.....(Design).....	Sept. 6, 1870
4,332	Same.....same.....(Design).....	Sept. 6, 1870
4,333	Same.....same.....(Design).....	Sept. 6, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,394	Campbell, Robert R., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet-pattern..... (Design).....	Oct. 11, 1870
4,395	Same..... same..... (Design).....	Oct. 11, 1870
4,396	Same..... same..... (Design).....	Oct. 11, 1870
4,397	Same..... same..... (Design).....	Oct. 11, 1870
99,843	Campbell, Samuel, and Duncan McFarlane, Palmer, Mass. Warping-machine.....	Feb. 15, 1870
106,119	Campbell, Solon O., Centretown, Mo. Railway-car coupling.....	Aug. 9, 1870
98,922	Campbell, Thomas A., New York, N. Y. Apparatus for oiling wool.....	Jan. 18, 1870
99,155	Campbell, M. E., Newark, N. J. Mortising-machine.....	Jan. 25, 1870
102,464	Campfield, Matthew E., assignor to American Eagle Steam Gauge Company, Newark, N. J. Adjustment of mercurial pressure-gauges.....	April 26, 1870
105,169	Campion, John, Woburn Centre, Mass. Apparatus for tanning.....	July 12, 1870
	Candee, L., & Co., <i>et al.</i> (See Elliott, J., & Fowler, assignors.)	
	Canfield, B. J. (See Proctor, Adonijah H., assignor.)	
102,487	Canfield, Charles B., Oriskany, N. Y. Clamp.....	May 3, 1870
102,655	Canfield, George C., Mechanicsburgh, Ohio. Water-elevator.....	May 3, 1870
110,432	Canfield, William M., Philadelphia, Pa. Lubricating compound for steam and other packing.....	Dec. 27, 1870
105,039	Cannell, Robert A., assignor to William R. C. Clark, New Orleans, La. Earth-closet.....	July 5, 1870
106,996	Cannon, Corydon S. and Clinton D., Chicago, Ill. Fruit-ladder.....	Sept. 6, 1870
108,756	Capamagian, Hagop H., Pittsburgh, Pa. Compound for treating wood.....	Nov. 1, 1870
103,138	Capeu, George O., assignor through mesne assignments to Stephen A. Barker. Providence, R. I. Spring bed-bottom.....	May 17, 1870
98,847	Capewell, George J., West Cheshire, Conn. Wrench.....	Jan. 18, 1870
100,372	Capron, Elisha P. H., Springfield, Ohio. Chimney-cowl.....	Mar. 1, 1870
100,373	Capron, Jacob, New York, N. Y. Sliding-door.....	Mar. 1, 1870
103,139	Same..... Sliding-door apparatus.....	May 17, 1870
109,298	Same..... Combined latch and lock for sliding-doors.....	Nov. 15, 1870
110,547	Same..... Annunciator.....	Dec. 27, 1870
	Carberry, John J. (See Wood, Joseph S., assignor)..... (Four cases.)	
	Carbon Stove Company. (See McCoy, John, assignor.)	
101,428	Card, Edward, Providence, R. I. Stove-leg.....	April 5, 1870
110,007	Card, George F., Piper City, Ill. Tool-chest.....	Dec. 13, 1870
99,403	Cardwell, P. H., Knoxville, Tenn. Submerged pump.....	Feb. 1, 1870
107,334	Carew, Frank, South Hadley Falls, Mass. Wire-cutter.....	Sept. 13, 1870
102,773	Carey, Isaac, Morristown, N. J. Faucet.....	May 10, 1870
	Carey, William T. (See Harner, David S., assignor.)	
99,156	Carey, Wilson W., and George W. Harris, Lowell, Mass. Hanger for shafting.....	Jan. 25, 1870
99,157	Same..... Planing-machine.....	Jan. 25, 1870
106,120	Same..... Boring-machine.....	Aug. 9, 1870
99,633	Cargill, William B., Waterbury, Conn. Corset-fastening.....	Feb. 8, 1870
	Carkeet, James H., and James A. Freeman. (See Freeman & Carkeet.)	
108,966	Carl, Thomas A., Nashville, Tenn. Spring bed-bottom.....	Nov. 8, 1870
101,821	Carleton, A. J., Springfield, Mass. Spoke-socket for carriage-wheels.....	April 12, 1870
104,109	Carleton, Albert S., Providence, R. I. Fountain-pen.....	June 14, 1870
109,585	Carleton, Cyrus, assignor to Willcox & Gibbs Sewing Machine Company, Brooklyn, N. Y. Hemmer and feller for sewing-machines.....	Nov. 29, 1870
105,641	Carleton, Ezra C., assignor to William Stewart & Co., Port Huron, Mich. Receptacle for measuring out shot.....	July 26, 1870
100,374	Carleton, Franklin B., Cambridge, Vt. Shield for pitchers, &c.....	Mar. 1, 1870
107,660	Carleton, Guy E., Old Town, Me. Horse hay-rake.....	Sept. 27, 1870
108,329	Carleton, Leonard, Pomeroy, Ohio. Subsoil-plow.....	Oct. 13, 1870
102,219	Carley, Timothy L., and Milton Broughton, said Broughton assignor to said Carley, Homer, N. Y. Planing-machine.....	April 26, 1870
98,923	Carlin, John, New York, N. Y. Plate-holder.....	Jan. 18, 1870
108,683	Carlisle, Henry, jr., Philadelphia, Pa. Bracelet.....	Oct. 25, 1870
104,704	Carll, Samuel P., and Amos Shute, Richmond, Ind. Car-coupling.....	June 23, 1870
110,548	Carlow, Joseph H., Kidder, Mo. Cultivator.....	Dec. 27, 1870
106,321	Carmac, James, and Alexander Stobbs, Hector, N. Y. Padding for harness.....	Aug. 16, 1870
107,446	Carman, Leander and Alexander C., McCoy's Station, Ohio. Clothes-basket.....	Sept. 21, 1870
102,772	Carmichel, Alexander, assignor to self, Jonathan P. Ames, Albert and Thomas V. Stillman, Westerly, R. I. Spool or bobbin.....	May 10, 1870
100,853	Carnes, Ferdinand M., assignor of one-half interest to Giles Carter and Smith Carpenter. Rochester, N. Y. Culinary boiler.....	Mar. 15, 1870
106,121	Carney, Josiah W., Charlestown, Mass. Valve for stop-cocks.....	Aug. 9, 1870
103,716	Carnes, William, New Cumberland, Ohio. Portable fence-post driver.....	May 31, 1870
110,008	Carns, William A., Malden, Mass. Exhaust-valve.....	Dec. 13, 1870
	Carns, William J., and Cornelius F. Hornbeck. (See Hornbeck & Carns.)	
4,056	Carpenter, Abraham H., Newark, N. J. Oxygen-generator..... (Design).....	May 24, 1840
	Carpenter, Allen. (See Gally, Merritt, assignor)..... (Two cases.)	
	Carpenter, E. W. (See Wheeler, Thomas W., assignor.)	
103,978	Carpenter, Henry F., Greencastle, Pa. Bee-hive.....	June 7, 1870
99,531	Carpenter, Hiram, New York, N. Y. Railway.....	Feb. 8, 1870
106,464	Carpenter, Jesse, Niconza, Ind. Combined shovel and dung-fork.....	Aug. 16, 1870
102,488	Carpenter, Lauren, St. Joseph, Mich. Fruit-basket.....	May 3, 1870
4,145	Same..... same..... (Reissue).....	Oct. 4, 1870
99,158	Carpenter, Mary P., San Francisco, Cal. Needle and arm for sewing-machine.....	Jan. 25, 1870
4,002	Same..... Needle for sewing-machine..... (Reissue).....	May 31, 1870
104,825	Same..... Fluting-machine.....	June 28, 1870
	Carpenter, Mary P., <i>et al.</i> (See Palmer, Charles H., assignor.)	
106,914	Carpenter, Michael K., Cincinnati, Ohio. Hoisting-apparatus.....	Aug. 30, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,422	Carpenter, N., <i>et al.</i> (See Howard, James Spooner, assignor.) .... (Two cases.) Carpenter, Ralph R., Tippecanoe, Ohio. Low-water indicator .....	July 19, 1870
101,580	Carpenter, Smith, and Giles Carter. (See Carnes, Ferdinand M., assignor.) Carr, Adam. (See Selden, William C., assignor.) .... (Two cases.) Carr, Charles, Boston, Mass. Device for ringing street-car bells. (Antedated April 1, 1870) .....	April 5, 1870
105,040	Same. Signaling apparatus for cars .....	July 5, 1870
100,854	Carr, Henry C., Bordentown, N. J. Potato-digger .....	Mar. 15, 1870
106,548	Same. Wheel plow .....	Aug. 23, 1870
100,499	Carr, Horace, Wooster, Ohio. Cultivator .....	Mar. 8, 1870
100,500	Same. .... same .....	Mar. 8, 1870
100,501	Same. .... same .....	Mar. 8, 1870
98,740	Carr, John M., <i>et al.</i> (See Tranter, Kinsey & Carr.) Carr, William S., New York, N. Y. Pump .....	Jan. 11, 1870
	Same. Water-closet .....	July 23, 1870
103,014	Carrier, Ashbell, J. (See Moyle, Samuel, jr., assignor.) Carroll, Charles, North Vernon, Ind. Digging and tamping pick .....	May 17, 1870
105,642	Carroll, Henry D., <i>et al.</i> (See Hitchcock, Robert, assignor.) .... (Reissue.)	July 26, 1870
104,422	Carroll, John, Detroit, Mich. Steam-generator .....	June 21, 1870
108,567	Carroll, John J., Washington, D. C. Device for roasting and baking .....	Oct. 25, 1870
107,220	Carroll, William H., Columbus, Miss. Shirt .....	Sept. 13, 1870
	Carruth, Francis W. (See Richardson, Everett P., assignor.) Carstaedt, Hugo, New York, N. Y. Shuttle for looms .....	
101,429	Carter, Calvin H. (See Gibbs, John, assignor.) Carter, Charles D., <i>et al.</i> (See Palmer, Charles H., assignor.) Carter, E. J. (See Westover, Charles W., assignor.)	April 5, 1870
100,257	Carter, E. P., Arcade, N. Y. Wagon-tongue .....	Mar. 1, 1870
99,532	Carter, Giles, and Smith Carpenter. (See Carnes, Ferdinand M., assignor.)	Feb. 8, 1870
110,340	Carter, Henry S., Chicago, Ill. Bed-lounge .....	Dec. 20, 1870
110,341	Carter, Ira, Champlain, N. Y. Water-wheel .....	Dec. 20, 1870
104,553	Carter, Jauc, Towanda, Pa. Safety-case for fruit-jars .....	Jan. 21, 1870
106,997	Carter, John T., and Moses B. Williamson, Xenia, Ill. Corn-planter .....	Sept. 6, 1870
104,110	Carter, Thomas, Niles, Ohio. Metal roofing .....	Feb. 26, 1870
	Carter, William, <i>et al.</i> (See Lee, Lee & Carter.) Carter, William H., Candor, N. Y. Bedstead-fastening .....	June 14, 1870
102,220	Carter, William L., Marietta, Pa. Ore-washer .....	April 26, 1870
103,560	Cartter, Miles S., and Hosea B., St. Louis, Mo. Truss-bridge .....	May 31, 1870
102,369	Cartwright, Peter, and William H. St. John. (See St. John & Cartwright.) Cartwright, Robert, Chicago, Ill. Core-barrel .....	April 26, 1870
103,561	Same. Molding pit for casting cylinders and pipes .....	May 31, 1870
105,643	Carver, Aaron, Little Falls, N. Y. Pump .....	April 26, 1870
102,370	Carver, Erastus H., Preble, N. Y. Corn-husking machine .....	July 26, 1870
110,009	Carver, Joseph Eleazer, assignor to Henry T. Pratt and John C. Alden, Bridge-water, Mass. Hulling-machine .....	April 26, 1870
101,095	Cary, Joseph C., New York, N. Y. Strap-fastening for packages .....	Dec. 13, 1870
110,010	Case, Daniel W., assignor to self and John S. Smith, Garden City, Minn. Water-wheel .....	Mar. 22, 1870
100,599	Case, G. F., assignor to Windsor Manufacturing Company, Windsor, Vt. Drill-guide .....	Dec. 13, 1870
103,562	Case, George F., assignor to self and Milan C. Bullock, Windsor, Vt. Stamp-mill or crusher .....	Mar. 8, 1870
4,078	Case, Henry C., Pekin, Ill. Animal-trap .....	May 31, 1870
108,757	Case, Henry J., Auburn, N. Y. Treadle for sewing-machines .....	July 26, 1870
101,225	Case, Henry J., assignor to self, Nelson Chapin, and Charles Richardson, Auburn, N. Y. Mechanical movement .....	Nov. 1, 1870
104,266	Case, Joel T., New Hartford, Conn. Water-wheel .....	Mar. 29, 1870
103,878	Case, John M., Worthington, Ohio. Steam-boiler feeder .....	June 14, 1870
105,423	Case, Nathan T. and Emma J., Des Moines, Iowa. Washing and cooking boiler .....	Nov. 1, 1870
104,423	Case, Russel C., Guilderland, N. Y. Dining-table .....	July 19, 1870
107,758	Casey, Albert P., Plantsville, Conn. Method of forming stump-joints for carriage-bows .....	June 21, 1870
106,778	Casey, James A., Maysville, Ky. Sulky-harrow, &c. ....	Sept. 27, 1870
3,811	Casey, James S., Voluntown, Conn. Saddle for spinning-machines .....	Aug. 30, 1870
102,774	Cash, John and Joseph, jr., England. Paper-file .....	Jan. 11, 1870
99,758	Cash, Thomas M., assignor to Hagar & Co., San Francisco, Cal. Printers' type .....	May 10, 1870
99,759	Cashwell, David, Wilmington, N. C. Distilling turpentine .....	Feb. 15, 1870
104,554	Casilear, George W., Washington, D. C. Ruling-machine .....	Feb. 15, 1870
	Same. Bank-notes, bonds, revenue stamps, &c. ....	June 21, 1870
104,267	Same. Printing-ink .....	Oct. 18, 1870
103,330	Baskey, Benjamin R. (See McLaughlin, Samuel, assignor.) Caslow, Henry, assignor to Jacob G. Myers, York, Pa. Churn .....	Feb. 22, 1870
100,116	Cass, James F., L'Original, Canada. Wrench .....	Aug. 16, 1870
106,465	Casseday, James, assignor to self and James D. Holt, Philadelphia, Pa. Seat for cars, &c. ....	June 14, 1870
104,111	Cassel, Ferdinand, Prussia. Preservation of meat and other articles of food .....	April 12, 1870
101,703	Cassidy, James, assignor to self and Harvey K. Flagler, East Boston, Mass. Apparatus for making tubing .....	Sept. 24, 1870
107,447	Cassidy, William, New Bedford, Mass. Apparatus for sealing pipe-joints .....	
	Casson, Peter, San Francisco, Cal. Removing burrs from wool .....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,563	Castellaw, Edwin A., Savannah, Ga. Hoisting-jack .....	May 31, 1870
110,200	Castle, David M., Constantine, Mich. Clevis .....	Dec. 20, 1870
100,581	Cate, Ebenezer, Watertown, Mass. Horseshoe .....	April 5, 1870
102,775	Same..... Bar for horseshoe-blanks .....	May 10, 1870
109,586	Same..... Horseshoe-bar .....	Nov. 29, 1870
107,661	Catlin, Henry W., Burlington, Vt. Washstand and tank .....	Sept. 27, 1870
99,159	Catlin, S. C., Cleveland Ohio. Automatic barrel-filler .....	Jan. 25, 1870
99,289	Catlin, S. C., and A. Corbin, Cleveland, Ohio. Lamp-extinguisher .....	Feb. 1, 1870
103,564	Catlin, S. C., Cleveland, Ohio. Siphon .....	May 31, 1870
110,201	Same..... Barrel-filler. (Antedated Dec. 17, 1870) .....	Dec. 20, 1870
110,202	Same..... Liquor-thief and measure. (Antedated Dec. 16, 1870) .....	Dec. 20, 1870
104,424	Cattaneo, Angelo, Newark, N. J. Machine for felting hats .....	June 21, 1870
3,847	Cauvet, Louis A., New York, N. Y. Insulator .....	Feb. 22, 1870
103,979	Same..... Wood-pavement .....	June 7, 1870
	Same..... (See White, James E., assignor.)	
	Cauvet, Louis A., and Andrew Stevens. (See Stevens & Cauvet.)	
105,776	Cavanaugh, Martin, Philadelphia, Pa. Liquor-pump .....	July 26, 1870
	Cawood, Joseph D., deceased, by George Johnson, administrator, Marshall, Mich. Repairing railway-bars .....	Sept. 3, 1870
107,221	Cayce, John M., Franklin, Tenn. Motive-power .....	Sept. 13, 1870
3,894	Cayce, John M., assignor to A. Thomas, Franklin, Tenn. Portable forging-apparatus .....	Mar. 22, 1870
106,779	Caylor, Jacob, Half-Way, Ind. Spade and shovel .....	Aug. 30, 1870
107,662	Caywood, Martin, Peoria, Ill. Stalk-cutter .....	Sept. 27, 1870
99,058	Ceiley, Archibald H., assignor to J. B. Gardiner, Springfield, Mass. Spring bed-bottom .....	Jan. 25, 1870
105,041	Ceredo, Paul, assignor to self and Thomas Ferguson Miller, Prussia. Device for curling and dressing hair .....	July 5, 1870
107,596	Same..... same .....	Sept. 20, 1870
109,495	Ceredo, Paul, Prussia. Nut-cracker .....	Nov. 22, 1870
98,555	Cerisier, Constant, France. Ventilating mill-stone .....	Jan. 4, 1870
108,879	Chace, Alonzo, assignor of one-half interest to Ezra Cornell, Ithaca, N. Y. Stereotyping .....	Nov. 1, 1870
101,430	Chace, John K., assignor to self and Silas A. Hsley, New York, N. Y. Fastening for pails, cans, &c .....	April 5, 1870
105,170	Chadborn, George L., and Thomas Coldwell. (See Coldwell & Chadbourn.)	
	Chadderdon, Edward, assignor of one-half interest to Albert Stineback, Howard, Mich. Suspension-gate .....	July 12, 1870
98,666	Chadwick, H. A., Burnet, Texas. Turbine water-wheel .....	Jan. 11, 1870
100,117	Chadwick, Robert, et al. (See Lutz, Boyce, Trenor, and Chadwick.)	
	Chadwick, Thomas, assignor of one-half interest to F. W. Cozad, Newton, Iowa. Portable furnace .....	Feb. 22, 1870
	Chaffee, Calvin C., et al. (See Reilley, John O., assignor.)	
100,723	Chaffee, Charles S., and Alexander Wahlig, assignors to selves and J. M. Goulding, Birmingham, Conn. Method of securing soles to boots and shoes .....	Mar. 15, 1870
105,171	Challinor, David, Birmingham, Pa. Lantern .....	July 12, 1870
105,644	Same..... Lamp .....	July 26, 1870
100,976	Chamberlain, Dexter H., West Roxbury, Mass. Dead-eye for wire-rigging .....	Mar. 22, 1870
100,977	Same..... Frictional gearing .....	Mar. 22, 1870
104,826	Same..... Rubber-roller for wringers, &c .....	June 28, 1870
108,106	Chamberlain, Orange M., assignor to self and George Moore, New York, N. Y. Lamp .....	Oct. 11, 1870
108,107	Chamberlin, Charles A., Pittsburgh, Pa. Railroad-ticket .....	Oct. 11, 1870
102,221	Chamberlin, Edwin, Lansingburgh, N. Y. Whip-socket .....	April 26, 1870
	Chamberlin, Edwin, and John O. Merriam. (See Morehouse, Charles B., assignor)	
106,998	Chamberlin, Edwin, assignor to self and John O. Merriam, Lansingburgh, N. Y. Whip-socket .....	Sept. 6, 1870
107,162	Chamberlin, George, Olean, N. Y. Ditching-plow .....	Sept. 6, 1870
107,335	Same..... Draft-harness .....	Sept. 13, 1870
98,556	Chamberlin, George E., assignor to New York Laundry Manufacturing Company, N. Y. Washing-machine .....	Jan. 4, 1870
99,290	Chamberlin, Henry W., New York, N. Y. Envelope-machine .....	Feb. 1, 1870
104,827	Chamberlin, Melvin C., Plain View, Minn. Rake-attachment for reapers .....	June 28, 1870
98,557	Chamberlin, M. C., and A. Clawson, Plain View, Minn. Rake-attachment for reapers .....	Jan. 4, 1870
99,634	Same..... Bell-tightener .....	Feb. 8, 1870
104,557	Chamberlin, William H., Medina, N. Y. Draft and hold-back attachment .....	June 21, 1870
	Chambers, Charles, et al. (See Ryerson & Stancliff, assignors.)	
	Same..... (See Ryerson, Stancliff & McIntosh, assignors.)	
	Chambers, Cyrus, jr., Philadelphia, Pa. Paper-folding machine... (Extension) .....	Oct. 4, 1870
	Same..... same..... (Disclaimer filed Oct. 10, 1870.)	
104,705	Chambers, Cyrus, jr., Philadelphia, Pa. Off-bearing apparatus for brick-machines .....	June 28, 1870
105,424	Same..... Paper-folding machine .....	July 19, 1870
4,079	Same..... same .....	July 26, 1870
108,880	Same..... Brick-machine .....	Nov. 1, 1870
109,803	Same..... same .....	Dec. 6, 1870
	Chambers, Cyrus, jr., and Edwin. (See Mendham, William, assignor.)	
	Chambers, Cyrus, jr., and William Mendham. (See Mendham & Chambers.)	
101,431	Chambers, Edwin, and Cyrus, jr., Philadelphia, Pa. Machine for grinding screws. (Antedated March 24, 1870) .....	April 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,160	Chambers, Edwin C. and Cyrus, jr. ( <i>See</i> Mendham, William, assignor.)	
104,555	Chambers, John, assignor to self and David Chambers, Birmingham, Pa. Machine for removing the "blow-over" on glass jars, &c.....	Jan. 25, 1870
104,536	Chambers, John D., Williamsport, Pa. Gate.....	June 21, 1870
104,828	Same.....	June 21, 1870
105,172	Chambers, William, Lynn, Mass. Method of lasting boots and shoes.....	June 28, 1870
109,804	Chambers, William, New Orleans, La. Cotton-bale tie.....	July 12, 1870
106,658	Same.....	Dec. 6, 1870
106,659	Chambers, William B., and Solomon H. Dwight. ( <i>See</i> Dwight & Chambers.)	
157,872	Chameroy, Edme Augustin, France. Apparatus for gauging or regulating the flow of water or other fluids.....	Aug. 23, 1870
107,448	Chance, Hiram D., Llewellyn, Pa. Extension step-ladder.....	Aug. 23, 1870
101,226	Chance, Hiram D., and Daniel Rishe, Llewellyn, Pa. Saw-filing and setting machine.....	Oct. 4, 1870
99,404	Chandler, Charles Frederick. ( <i>See</i> Boivin & Loiseau, assignors.)	
106,549	Chandler, George D., West Concord, Vt. Sap-feeder to sugar-evaporators. (Antedated Sept. 10, 1870.)	Sept. 20, 1870
99,404	Chandler, George R., Detroit, Mich. Washing-machine.....	Mar. 29, 1870
106,549	Chandler, George W., assignor to Henry and Albert A. Whitney, Mason, N. H. Apparatus for binding grain.....	Feb. 1, 1870
99,405	Chandler, George W., assignor to self and Calvin Searle, Mason, N. H. Hitch-hook.....	Aug. 23, 1870
99,161	Chandler, Henry. ( <i>See</i> Smith, J. Plummer, assignor.)	
98,558	Chandler, John P., Wilton, Me. Carriage-hub.....	Feb. 1, 1870
98,558	Chandler, R. K., Ruthr Glen, Va. Tooth-brush. (Antedated Jan. 17, 1870).....	Jan. 25, 1870
98,848	Chandler, Thomas E., and John C. Bartholomew, assignors to Thomas E. Chandler and Franklin Taylor, Indianapolis, Ind. Saw-mill.....	Jan. 4, 1870
103,299	Chanute, O., and G. S. Morison, Kansas City, Mo. Dredging-machine.....	Jan. 18, 1870
103,300	Chapin, Eugene, St. Louis, Mo. Drinking-tube for invalids.....	May 24, 1870
99,533	Same.....	May 24, 1870
106,999	Chapin, Gilbert W., Brooklyn, N. Y. Adding-machine.....	Feb. 8, 1870
108,005	Same.....	Sept. 6, 1870
106,466	Chapin, Henry A., New York, N. Y. Apparatus for carbureting air and gas.....	Oct. 4, 1870
99,162	Chapin, Henry A., assignor to William Sparks Thomson, Bridgeport, Conn. Machine for spinning flax, hemp, &c.....	Aug. 16, 1870
105,173	Chapin, Louis N., New Lisbon Township, N. Y. Chimney-cowl.....	Jan. 25, 1870
99,534	Chapin, Nelson, <i>et al.</i> ( <i>See</i> Case, Henry J., assignor)..... (Reissue.)	
100,258	Chapman, Athanasius B., Clyde, Ohio. Pruning-shears.....	July 12, 1870
106,322	Chapman, C. H., Shirley, Mass. Step and bolster for cotton-spindles.....	Feb. 8, 1870
107,336	Chapman, Charles H., assignor to A. G. Snell, Shirley, Mass. Tag-machine.....	Mar. 1, 1870
100,502	Chapman, Dudley B., New London, Conn. Manufacture of resin soap.....	Aug. 16, 1870
100,503	Chapman, Eugene, Lacon, Ill. Broom or mop clamp.....	Sept. 13, 1870
103,717	Chapman, Frank G., assignor to Dennis Beach, Chicago, Ill. Mortising-machine.....	Mar. 8, 1870
107,222	Same..... Machine for polishing wood.....	Mar. 8, 1870
3,822	Same..... Machine for sand-papering moldings.....	May 31, 1870
102,489	Same..... Machine for tenoning window-sash.....	Sept. 13, 1870
104,268	Chapman, George T., New York, N. Y. Horseshoe..... (Reissue.)	Feb. 8, 1870
107,000	Same..... ( <i>See</i> Gee, John H., assignor.)	
100,978	Chapman, John L., West Roxbury, Mass. Draw-slide.....	May 3, 1870
99,059	Chapman, Joseph L., assignor to self and James Blee Stuart, Philadelphia, Pa. Brick-machine.....	June 14, 1870
106,254	Chapman, Levi, New York, N. Y. Mode of forming umbrella-handles from plastic materials.....	Sept. 6, 1870
106,323	Chapman, Luke, Collinsville, Conn. Wrench.....	Mar. 22, 1870
107,223	Chapman, Luke, assignor to the Collins Company, Collinsville, Conn. Milling-machine.....	Jan. 25, 1870
110,011	Chapman, Matthew, Greenfield, Mass. Handle for knives.....	Aug. 9, 1870
4,038	Same..... Table-knife.....	Aug. 16, 1870
4,039	Same..... Handle for table and other cutlery.....	Sept. 13, 1870
106,467	Chapman, Nathan, Hopedale, Mass. Hay and cotton press.....	Dec. 13, 1870
104,112	Chapman, Oliver S., Canton, Mass. Excavating-machine. (Reissue, division A).....	June 21, 1870
104,930	Same..... (Reissue, division B).....	June 21, 1870
105,645	Chapman, Sylvanus, Charlestown, Mass. Wrench.....	Aug. 16, 1870
98,924	Chapman, William C., Charleston, S. C. Rice-screen.....	June 14, 1870
103,565	Chapman, William D., Theresa, N. Y. Minnow-propeller.....	July 5, 1870
103,136	Chappel, John H., and Charles L. Camp. ( <i>See</i> Camp & Chappel.)	
101,582	Chappell, John H., Brooklyn, N. Y. Toy money-box.....	July 26, 1870
110,112	Chapple, John, Jasper, N. Y. Churn.....	Jan. 18, 1870
105,425	Charles, Michael E., Hope, Ind. Stand and clothes-drier.....	May 31, 1870
100,855	Charlesworth, Clark H., and Joseph H. Short, Avoca, N. Y. Harvester.....	May 17, 1870
103,843	Chase, Andrew J., Boston, Mass. Refrigerator.....	April 5, 1870
98,741	Chase, Andrew J., assignor to self and Perrin C. Drisko, Boston, Mass. Refrigerator.....	Dec. 13, 1870
100,375	Chase, Austin C. ( <i>See</i> Wolcott, Russell F., assignor.)	
	Chase, Henry A., Tulley, N. Y. Medical compound for treating rheumatism, &c.....	July 19, 1870
	Chase, James, Rochester, N. Y. Wood-turning lathe.....	Mar. 15, 1870
	Same..... Sawing-machine. (Antedated May 23, 1870).....	June 7, 1870
	Same..... ( <i>See</i> Durgin, H. J., assignor.)	
	Chase, John, Paterson, N. J. Scroll-case for water-wheels.....	Jan. 11, 1870
	Chase, J. S. ( <i>See</i> Plumer, Isaac L., assignor.)	
	Chase, Lewson E., assignor to Chase & Co., Watertown, Mass. Confectionery..	Mar. 1, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,548	Chase, Milton, assignor to self and Horace Chase, Haverhill, Mass. Sewing-machine and its supporting-table.....	July 19, 1870
98,666	Chase, Philander, Peoria, Ill. Machinery for cutting barrel-heads.....	Jan. 11, 1870
105,426	Chase, Thomas, Washington, D. C. Anti-friction gearing.....	July 19, 1870
100,600	Chase, Wesley, Buffalo, N. Y. School-desk and seat.....	Mar. 8, 1870
3,882	Same.....Settee.....(Reissue).....	Mar. 22, 1870
101,096	Chase, William C. (See Perrine, Alfred T., assignor.)	
100,979	Chatfield, George W., New Haven, Conn. Medicine or cough sirup.....	Mar. 22, 1870
101,433	Chatfield, Thomas W., Utica, N. Y. Hot-air furnace.....	Mar. 22, 1870
110,433	Chatham, Walter S., assignor to John W. Riddell, Williamsport, Pa. Boot-jack and door-buffer.....	Dec. 27, 1870
105,777	Chattaway, George T., Brooklyn, N. Y. Scissors-sharpening attachment for sewing-machines.....	July 26, 1870
98,559	Chattin, James, Marion, Iowa. Scaffold-bracket.....	Jan. 4, 1870
101,709	Chaufourier, Jules Alfred, France. Self-feeding cotton-gin.....	April 12, 1870
107,873	Chavanue, Julius, Switzerland. Vise.....	Oct. 4, 1870
	Chaytor, Hugh, <i>et al.</i> (See Thomas, John, assignor.)	
106,660	Check, Moses D., Memphis, Tenn. Baling-press.....	Aug. 23, 1870
101,822	Check, Nash, Chapel Hill, N. C. Cotton and tobacco press.....	April 12, 1870
110,549	Same.....Cotton-press.....	Dec. 27, 1870
105,646	Cheeseman, William B., Winona, Minn. Washing-machine.....	July 26, 1870
101,823	Cheever, John H., New York, N. Y. India-rubber carpeting and embossed matting.....	April 12, 1870
105,904	Cheney, Chandler, assignor of one-half interest to William Nash, Milford, Mass. Coupling for wheel-fellies.....	Aug. 2, 1870
	Cheney, E. R. (See Emery, John J., assignor).....(Reissue.)	
102,916	Cheney, Ethan R., assignor to self and Naylor & Co., Boston, Mass. Machine for straightening bars of metal.....	May 10, 1870
104,425	Cheny, Ethan R., and John J. Emery, Boston, Mass. Cable-stopper.....	June 21, 1870
106,031	Same.....same.....	Aug. 2, 1870
101,710	Chenoweth, James, Shelbyville, Mo. Rotary spader.....	April 12, 1870
103,303	Cherry, John W., Carthage, Ill. Fence.....	July 12, 1870
102,490	Chesebrough, Amos S., Hartford, Conn. Device for securing the features of a corpse in place.....	May 3, 1870
99,406	Chesebrough, Robert A., New York, N. Y. Method of aerial transit. (Antedated Jan. 24, 1870).....	Feb. 1, 1870
	Cheshire Manufacturing Company. (See Guilford, Ralph H., assignor.)	
195,427	Chesman, Francis G., Lemont, Ill. Grain-meter.....	July 19, 1870
106,324	Chester, Charles T., Englewood, N. J. Protecting safes and vaults from burglars.....	Aug. 16, 1870
93,742	Chevallier, Louis, Williamsburgh, N. Y., and Robert Brass, Waterbury, Conn. Wire-cradle.....	Jan. 11, 1870
106,915	Chevrier, Gervais, France. Treating acid tar from coal.....	Aug. 30, 1870
106,661	Chew, Charles F., England. Piano.....	Aug. 23, 1870
100,259	Chichester, Lewis S., Brooklyn, N. Y. Coal-hoisting apparatus.....	Mar. 1, 1870
107,001	Chicken, William, Chelsea, Mass. Button-hole sewing-machine.....	Sept. 6, 1870
	Chickering & Sons. (See Neill, George W., assignor.)	
99,759	Child, Cyril C., Boston, Mass. Gauge for paper-cutting machines.....	Feb. 15, 1870
	Same.....(See Montague, Charles, assignor.)	
4,293	Child, Pascal P., St. Louis, Mo. Journal-box.....(Design).....	Aug. 16, 1870
	Child, William Henry, <i>et al.</i> (See Loader, John, assignor.)	
	Child, William Henry, and John Loader. (See Loader & Child, assignors.)	
	Childs, John W. (See Stilson, Lyman B., assignor.)	
	Childs, O. D. (See Wright, Horton, assignor.)	
	Childs, Warner A. (See Pelisse, Augustus, assignor.)	
99,635	Chinn, Richard H., Washington, D. C. Fountain-pen.....	Feb. 8, 1870
110,342	Same.....Pen.....	Dec. 20, 1870
109,384	Chinn, Richard H., and John F. Rigart, Washington, D. C. Sheet-metal cover for sewing-machines.....	Nov. 22, 1870
100,980	Chinnock, George H., New York, N. Y. Toilet-mirror.....	Mar. 22, 1870
103,980	Chinnock, George H., New York, N. Y., and Edward P. Williams, Elizabeth, N. J. Toilet-mirror.....	June 7, 1870
	Same.....(See William & Chinnock).....(Three cases.)	
4,066	Chipman, George W., Boston, Mass. Carpet-lining.....(Reissue).....	July 12, 1870
	Chipp, J. Deyo. (See Schryver, Henry, assignor.)	
	Chisholm, J. W. and K. (See Solomons, Leopold, assignor).....(Design.)	
	Chittenden, Morgan, <i>et al.</i> (See Jennings, Frederick S., assignor.)	
	Chittenden, Samuel M., and Ephraim Martin. (See Martin & Chittenden, assignors.)	
101,711	Choate, George C., Wyoming Territory. Shovel-handle.....	April 12, 1870
110,203	Chormann, Ernest G., and Edward McLaughlin, Philadelphia, Pa. Kitchen and household sink.....	Dec. 20, 1870
106,550	Christen, Joseph, New Orleans, La. Tile-machine.....	Aug. 23, 1870
108,967	Christian, Andrew, New York, N. Y. Steering-mechanism for velocipedes.....	Nov. 8, 1870
3,892	Christie, Hugh, Morrisania, N. Y. Carpet-pattern.....(Design).....	Mar. 8, 1870
3,896	Christie, Hugh, assignor to W. M. Brasher & Co., Brooklyn, N. Y. Floor-cloth pattern.....	Mar. 15, 1870
	Same.....Floor-cloth pattern.....(Design).....	Mar. 15, 1870
3,897	Same.....Floor-cloth pattern.....(Design).....	Mar. 15, 1870
4,176	Christie, Hugh, assignor to Israel Foster, Brooklyn, N. Y. Carpet-pattern. (Design).....	June 28, 1870
4,177	Same.....Carpet-pattern.....(Design).....	June 28, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,252	Christie, Hugh, assignor to Israel Foster, Brooklyn, N. Y. Carpet-pattern. (Design)	July 19, 1870
	Christie, Thomas A., and Henry L. Butler. (See Butler & Christie.)	
	Christlip, L. C., and Louis Bach. (See Bach & Christlip.)	
100,981	Christoffel, John B., Williamsburgh, N. Y. Gauge-cock	Mar. 22, 1870
103,634	Christopher, Jesse K., Dayton, Ohio. Horseshoe	Oct. 25, 1870
98,560	Chubb, A. L., Grand Rapids, Mich. Cultivator	Jan. 4, 1870
100,013	Chubbuck, S. E., assignor to self, Israel Y. and S. E. Chubbuck, jr., Boston, Mass. Water-heater for green-houses	Feb. 22, 1870
107,874	Same..... Stove-leg	Oct. 4, 1870
105,778	Chnrch, D. M., assignor to self and Timothy Merrick, Holyoke, Mass. Spool of thread for sewing-machine shuttles	July 26, 1870
103,758	Church, Dwight M., Holyoke, Mass. Thread-winding machine	Nov. 1, 1870
107,002	Church, Henry M., Brunswick, Ohio. Method of hanging grindstones	Sept. 6, 1870
	Churchill, Bela L., and George C. Vanderslice. (See Vanderslice & Churchill.)	
	Churchill, Robert W., and Frederick Eggs. (See Eggs & Churchill.)	
104,113	Churchman, T. C., Sacramento, Cal. Snow-plow	June 14, 1870
105,042	Chutaux, Theophile, France. Electric battery	July 5, 1870
105,043	Same..... same	July 5, 1870
101,832	Chwatal, Herman, assignor to W. Staehlen and L. Portong, New York, N. Y. Pressure-gauge. (Antedated April 2, 1870)	April 12, 1870
107,224	Ciccor, Julius, Davenport, Iowa. Sofa	Sept. 13, 1870
105,174	Cilley, Daniel, Osceola Mills, Pa. Muley-saw hanging	July 12, 1870
	Cilley, William H. (See Ames, Gustavus, assignor.)	
105,423	Cills, William, Philadelphia, Pa. Packing tobacco-box	July 19, 1870
	Cincinnati Type Foundry. (See Reuter, Conrad, assignor.)	
4,085	Cinquini, Pietro, assignor to Bradley & McHubbard, West Meriden, Conn. Chandelier	May 31, 1870
4,086	Same..... Lamp-bracket	May 31, 1870
107,225	Claffin, George, Miller's Corners, N. Y. Adjustable lifting-ladder	Sept. 13, 1870
106,916	Clagett, David, Hagerstown, Md. Hay-loader	Aug. 30, 1870
109,587	Clampitt, Elias, Baltimore, Md. Hydrant	Nov. 29, 1870
	Claney, William M., et al. (See Huntsman, E. N., assignor.)	
3,620	Clapp, Abel S., New York, N. Y. Carriage-body	Jan. 25, 1870
102,776	Clapp, Charles, assignor to Erastus C. and Chauncey P. Gregg, Trumansburg, N. Y. Harvester	May 10, 1870
	Clapp, E. D., et al. (See Van Patten, Frederick, assignor.)	
	Clapp, E. D., and Frederick Van Patten. (See Van Patten & Clapp.)	
109,175	Clapp, George, Geneva, N. Y. Fruit-crate	Nov. 15, 1870
	Clapp, James H., and Daniel B. Read. (See Read & Clapp, assignors.)	
	Clapp, Ozo W. (See Hall, Elias P., assignor.)	
100,724	Clark, A. B., North Oxford, Mass. Boot and shoe shave	Mar. 15, 1870
103,844	Same..... Grass Lake, Mich. Hay-loading device	June, 7, 1870
105,304	Clark, Alfred D., Greenfield, Ohio. Automatic feeder and indicator for steam-boilers	July 12, 1870
109,385	Clark, Andrew, Plymouth, Ohio. Machine for washing and wringing clothes	Nov. 22, 1870
102,176	Clark, Augustus R., Onondaga, N. Y. Hay-binder	Nov. 15, 1870
99,844	Clark, Charles B., Buffalo, N. Y. Blind-lunge. (Antedated Jan. 5, 1870)	Feb. 15, 1870
108,968	Same..... Sash-holder	Nov. 8, 1870
105,905	Clark, Charles H., Pittsfield, Me. Combined swift and reel	Aug. 2, 1870
105,906	Same..... Bit-stock	Aug. 2, 1870
	Clark, Daniel J., et al. (See Bond, Thomas, assignor.)	
108,237	Clark, David W., Tidouite, Pa. Pump-valve	Oct. 11, 1870
100,725	Clark, Decius W., Chicago, Ill. Enamel for clay gas-retorts, burners, tiles, &c.	Mar. 15, 1870
104,269	Clark, Dewitt C., and Henry W. Cady, Sioux City, Iowa. Coal-stove	June 14, 1870
104,426	Clark, Edward B., Philadelphia, Pa. Pipe-tongs	June 21, 1870
101,583	Clark, Elijah, assignor to United States Steam Gauge Company, Louisville, Ky. Registering steam-gauge	April 5, 1870
	Clark, Elisha C., et al. (See Magee, James, assignor.)	
105,779	Clark, Emma, Buffalo, N. Y. Culinary vessel	July 26, 1870
101,982	Clark, Erastus Y., New York, N. Y. Saw-set	April 19, 1870
	Clark, Eugene, and Henry L. Franklin. (See Franklin & Clark.)	
	Clark, Ezra W., jr., et al. (See Hood & Clark.)	
103,449	Clark, Fannie M. B., Wilmington, Vt. Work-table	Oct. 15, 1870
103,238	Clark, George, assignor to self, Franklin B. Ives, and R. L. Dean, Dover, Ill. Road-scraper and ditcher	Oct. 11, 1870
	Clark, George R. (See Taylor, A. P., assignor.)	
	Clark, Henry A. (See Tirrell, Jacob Porter, assignor.)	
	Same..... (See Kelsey, William, assignor.)	
	Clark, H. M., deceased, by William S. Booth, administrator, New Britain, Conn. Machine for heading bolts	Jan. 10, 1870
101,584	Clark, Hezekiah M., assignor to Elisha J. Barnard and Charles Blanchard, Meriden, Conn. Lamp	April 5, 1870
99,291	Clark, Isaac H., Boston, Mass. Apparatus for extinguishing fires. (Antedated Jan. 20, 1870)	Feb. 1, 1870
102,091	Clark, James A., Leavenworth, Ind. Head-block for saw-mills	April 19, 1870
107,875	Clark, James B., Plantsville, Conn. Machine for drilling carriage-shackles	Oct. 4, 1870
110,113	Clark, James F., Morenci, Mich. Brick-press	Dec. 13, 1870
101,712	Clark, James V., Camden, N. J. Clothes-drier	April 12, 1870
98,925	Clark, John, Astoria, N. Y. Pipe-tongs	Jan. 18, 1870
99,846	Same..... Harrisburg, Pa. Piston-packing	Feb. 15, 1870
103,140	Same..... same	May 17, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,685	Clark, John, assignor to self and Alfred Adamson, Philadelphia, Pa. Coupling-attachment for pianos	Oct. 25, 1870
	Clark, John, and Marimaduke Wilkin. (See Wilkin & Clark.)	
103,044	Clark, John Hosmer, Washington, D. C. File	July 5, 1870
105,429	Same..... Flemington, N. J. Gate for railway-crossings	July 19, 1870
107,876	Clark, John S., Philadelphia, Pa. Range for heating and cooking	Oct. 4, 1870
101,433	Clark, Jonathan M., New York, N. Y. Steam-generator	April 5, 1870
101,434	Same..... same	April 5, 1870
106,662	Same..... same	Aug. 23, 1870
	Clark, Joseph D. (See Cummings, Perley M., assignor.)	
	Clark, Joseph W. (See McChesney, Henry, assignor.)	
105,907	Clark, Josiah S., Philadelphia, Pa. Branch-attachment for water-tubes	Aug. 2, 1870
104,829	Clark, Lucas C., Plantsville, Conn. Tea-pot handle	June 28, 1870
99,535	Clark, L. S., assignor to self, G. S. Peck, and G. W. Lyon, Bethel, Conn. Shifting cutter-thills	Feb. 8, 1870
	Clark, Mary E. B. (See Drake, James A., assignor)..... (Three cases.)	
108,450	Clark, Michael R., Columbia, S. C. Cotton-bale tie	Oct. 18, 1870
100,118	Clark, Milton W., assignor to R. Ball & Co., Worcester, Mass. Blind-slat	Feb. 22, 1870
101,824	Same..... Combined pulley and clamp	April 12, 1870
102,222	Same..... Cutter-head	April 26, 1870
105,647	Clark, Moses Neal, Harrison City, Pa. Sawing-machine	July 26, 1870
106,122	Clark, Patrick, Rahway, N. J. Pipe-joint	Aug. 9, 1870
99,407	Clark, P. C., Philadelphia, Pa. Oil-can	Feb. 1, 1870
	Clark, P. J. (See Kintz, Joseph, assignor)..... (Two cases.)	
102,491	Clark, Philo W., Oblong, N. Y. Horse-power	May 3, 1870
102,492	Same..... Excavating-apparatus	May 3, 1870
99,292	Clark, Simeon, Howard, N. Y. Horse hay-fork	Feb. 1, 1870
	Clark, Susan H. (See Barnes, William F., assignor.)	
107,203	Clark, Thomas A., and Henry C. Masecroft, Worcester, Mass. Fruit-jar cover	Sept. 6, 1870
107,449	Same..... Fruit-jar	Sept. 20, 1870
100,856	Clark, Thomas J. and George M. Higginum, Conn. Hay-tedder	Mar. 15, 1870
108,686	Same..... Cutting-apparatus for harvesters	Oct. 25, 1870
105,648	Clark, Thomas S., Charlestown, Mass. Water-proof cement	July 26, 1870
101,227	Clark, William, Johnsonville, N. Y. King-bolt for carriages	Mar. 29, 1870
102,493	Clark, William, Decatur, Ill. Lifting-jack	May 3, 1870
101,097	Clark, William A., Woodbridge, Conn. Carriage-axle	Mar. 22, 1870
100,857	Clark, William J., Lena, Ill. Egg-carrier	Mar. 15, 1870
4,025	Same..... Providence, R. I. Trade-mark..... (Design)	May 17, 1870
	Clark, W. J., & Co. (See Hotchkiss, Bennet, assignor.)	
106,325	Clark, William M., and Alexander, Pittsburgh, Pa. Post-office cabinet for Sunday-school and other rooms	Aug. 16, 1870
101,098	Clark, William R. C., New Orleans, La. Earth-closet	Mar. 22, 1870
102,494	Same..... same	May 3, 1870
102,495	Same..... same	May 3, 1870
105,045	Same..... same	July 5, 1870
	Same..... (See Caunell, Robert A., assignor.)	
	Same..... (See Drake, James A., assignor)..... (Two cases.)	
	Clark, William R. C., and James A. Drake. (See Drake & Clark.)	
	Clark, William T. (See Knowlton, William F., assignor.)	
103,566	Clarke, Alfred and Arthur, Philadelphia, Pa. Shoemakers' tool	May 31, 1870
110,434	Clarke, Almon, assignor of one-half interest to Charles A. Spencer, Sheboygan Falls, Wis. Umbrella-holder	Dec. 27, 1870
101,432	Clarke, F. L., Oakland, Ill. Back-machine	April 5, 1870
98,561	Clarke, F. O., Unadilla Forks, N. Y. Water-wheel	Jan. 4, 1870
107,759	Clarke, Greville E., Racine, Wis. Fanning-mill	Sept. 27, 1870
109,386	Clarke, Henry, Baltimore, Md. Umbrella-lock	Nov. 22, 1870
	Clarke, Henry A. (See Jewsbury, Joseph, assignor.)	
105,780	Clarke, Hugh Archibald, Philadelphia, Pa. Organ, melodeon, &c.	July 26, 1870
99,845	Clarke, James A., New York, N. Y. Latch	Feb. 15, 1870
110,435	Clarke, James Freeman, West Roxbury, Mass. Astronomical lantern	Dec. 27, 1870
3,827	Clarke, John, Boston, Mass. Stool-pan and its cover..... (Design)	Feb. 1, 1870
102,092	Clarke, John W., Kingston, Wis. Combined manure fork and scraper	April 19, 1870
100,982	Clarke, Orlando, Rockford, Ill. Base-burning stove for shavings and other light fuel	Mar. 22, 1870
	Same..... Sectional steam-generator	Mar. 22, 1870
100,983	Clarke, Richard T., assignor to self and Gabriel A. Taylor, Philadelphia, Pa. Process of purifying linseed oil	May 17, 1870
103,141	Clarke, Robert, Macon, Ga. Laundry-indicator	Mar. 8, 1870
100,601	Clarke, Samuel, and William Crawford. (See Crawford & Clarke, assignors.)	
99,060	Clarke, S. W., New Milford, Conn. Washing-machine	Jan. 25, 1870
	Clarke, Thomas William, and William S. Dexter, trustees. (See Whelpley & Storer)..... (Reissue.)	
	Same..... (See Storer & Whelpley, assignors)..... (Disclaimer.)	
105,908	Clarke, William E., assignor to Mary E. Dean, Troy, N. Y. Joint for tongs, &c.	Aug. 2, 1870
165,549	Clarkson, Edward H., assignor to self and James H. Robinson, Alexandria, Va. Valve for water-boilers	July 19, 1870
102,496	Clarkson, James, and George W. Decker, Washington, D. C. Lime-kiln	May 3, 1870
99,293	Clarkson, W. J., Gordon's Depot, Northeastern Railroad, S. C. Animal-trap	Feb. 1, 1870
109,177	Clarner, John Ernest, assignor of one-half interest to Benjamin F. Greene and Horace Daniels, Pawtucket, R. I. Apparatus for bleaching threads, yarns, &c.	Nov. 15, 1870
98,667	Class, William F., and W. Napp, Cleveland, Ohio. Liquid-meter	Jan. 11, 1870
108,568	Class, William F., and Leo W. Sapp, Cleveland, Ohio. Faucet	Oct. 25, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Clawson, A., and M. C. Chamberlin. ( <i>See</i> Chamberlin & Clawson). (Two cases.)	
4,016	Clay, E. C., and A. B. Ely. ( <i>See</i> Ely & Clay.)	
100,858	Clayton, Barnes, Philadelphia, Pa. Sleeve-button and stud. (Reissue)	June 7, 1870
109,588	Clayton, Webster M., New York, N. Y. Stair-rod.	Mar. 15, 1870
99,536	Clegg, Edward T., North Harpersfield, N. Y. Burglar-alarm.	Nov. 29, 1870
	Clemans, Joseph B., Kansas, Ill. Seed-drill.	Feb. 8, 1870
	Clemence, Benjamin T., <i>et al.</i> ( <i>See</i> Green, Melvin R., assignor.)	
109,496	Clement, John P., Grinnell, Iowa. Wind-mill.	Nov. 22, 1870
101,228	Clement, Nathan S., Northampton, Mass. Machine for picking screws.	Mar. 29, 1870
102,223	Clements, Albion P., and John C. Nealey, Monroe, Me. Cultivator.	April 26, 1870
107,760	Clements, Jesse, Blooming Grove, Ind. Corn-cultivator.	Sept. 27, 1870
108,759	Clements, Thomas A., Little Rock, Ark. Printers' chase.	Nov. 1, 1870
108,760	Same. same.	Nov. 1, 1870
106,326	Clemmons, Alveus J., Aberdeen, Miss. Well-bucket.	Aug. 16, 1870
103,255	Clemons, Everett, Catawissa, Pa. Seal-lock.	Aug. 2, 1870
4,149	Clemons, Robert G., Nashua, N. H. Spool-stand. (Design)	June 14, 1870
102,497	Clemons, Samuel P., Dansville, N. Y. Cattle-poke.	May 3, 1870
101,092	Clemson, William, Middletown, N. Y. Saw-swage.	Mar. 22, 1870
101,229	Same. Saw-gange.	Mar. 29, 1870
	Same. Grinding circular saws. (Extension)	May 24, 1870
104,830	Same. Machine for grinding saw-teeth.	June 28, 1870
106,123	Same. Saw-handle.	Aug. 9, 1870
	Clemson, William, <i>et al.</i> ( <i>See</i> Tuttle, Joseph H., assignor). (Reissue.)	
	Clendenning, J. M., <i>et al.</i> ( <i>See</i> Doubler, John W. H., assignor.)	
3,948	Clendinen, William H., Baltimore, Md. Ornamental letters. (Design)	April 5, 1870
	Cleveland, Albert. ( <i>See</i> Thompson, A. B., assignor.)	
99,760	Cleveland, A. J., Baltimore, Md. Window-frame. (Antedated Jan. 31, 1870).	Feb. 15, 1870
	Cleveland Fire-Alarm Company. ( <i>See</i> Shawk, George W., assignor.)	
104,114	Cleveland, James B., and Henry C. Guildersleve, Newark, N. J. Machine for forming elliptic springs.	June 14, 1870
	Cleveland Non-Explosive Lamp Company. ( <i>See</i> House, Mark W., assignor.)	
105,909	Clifford, Henry A., Rockville, Conn. Stop-action for cabinet organs, &c.	Aug. 2, 1870
99,847	Clifford, Thomas G., assignor to self and William B. Clifford, New York, N. Y. Folding-bedstead.	Feb. 15, 1870
110,550	Clifton, Josiah, Georgetown, Texas. Plow.	Dec. 27, 1870
108,239	Clifton, William C., Elk River Township, Iowa. Corn-plow.	Oct. 11, 1870
	Climax Horse Collar Company. ( <i>See</i> Marshall, Charles K., assignor.)	
106,780	Clime, John C., Philadelphia, Pa. Velocipede.	Aug. 30, 1870
109,178	Same. Sawing-machine. (Antedated Nov. 11, 1870).	Nov. 15, 1870
	Cline, Conrad, and Peter Burress. ( <i>See</i> Burress & Cline.)	
	Cline, John W., <i>et al.</i> ( <i>See</i> Swickard, Noah, assignor). (Reissue.)	
	Cline, William, jr., and J. Morgan. ( <i>See</i> Morgan & Cline.)	
103,142	Clingen, Robert, assignor to Thomas Goddard, Boston, Mass. Flap-fastener for the dasher of carriages.	May 17, 1870
101,825	Clinger, Peter S., Conestoga Centre, Pa. Seat and cap for tie and sill-plate.	April 12, 1870
	Clinton, Charles M., and B. W. Squires. ( <i>See</i> Squires & Clinton.)	
	Clinton, Charles M., and W. W. Travis. ( <i>See</i> Travis & Clinton.)	
101,585	Clinton, Charles M., assignor to self and A. H. Gregg, Ithaca, N. Y. Lawn-mower.	April 5, 1870
99,163	Clippinger, I. A., Newton, Iowa. Shoemakers' tool.	Jan. 25, 1870
99,636	Clippinger, I. A., and S. S. Pratt, Newton, Iowa. Bed-bottom.	Feb. 8, 1870
	Clissold, William, and James Apperly. ( <i>See</i> Apperly & Clissold). (Extension.)	
107,450	Clock, Frank B., Boston, Mass. Shaving-mug.	Sept. 20, 1870
104,270	Clock, Lewis G., Manchester, N. H. Earth-closet.	June 14, 1870
107,451	Same. same.	Sept. 20, 1870
101,826	Cloes, John Joseph, assignor to Edward de Beaumont, Belgium. Breech-loading fire-arm.	April 12, 1870
102,498	Close, Thomas J., Philadelphia, Pa. Reversible seat for railway-cars.	May 3, 1870
110,436	Close, Walter R., Bangor, Me. Tidal motive power.	Dec. 27, 1870
107,877	Clood, Hiram W., Evansville, Ind. Medical compound.	Oct. 4, 1870
108,451	Cloudman, Augustin F., Brooklyn, N. Y., and George W. Coffin, Charlestown, Mass. Composing-stick.	Oct. 18, 1870
	Clough, Carlos. ( <i>See</i> Fitch, Eugene L., assignor.)	
	Clough, Isaac S., and William S. Estey. ( <i>See</i> Estey & Clough.)	
103,981	Clough, Jefferson M., Ilion, N. Y. Cotton-gin.	June 7, 1870
104,271	Clough, Theodore, Dobb's Ferry, N. Y. Gas-burner.	June 14, 1870
	Clough, William T., Newark, N. J. Concentrating-apparatus for sulphuric acid. (Extension)	June 29, 1870
108,761	Clover, William C., assignor to Henry E. Clover, Brooklyn, N. Y. Curtain-fix-ture.	Nov. 1, 1870
107,004	Clow, Daniel, Janesville, Wis. Harvester-rake.	Sept. 6, 1870
107,452	Clow, George E., assignor to self and Benjamin Clow, Jeffersonville, Ind. Securing hubs to axles.	Sept. 20, 1870
	Clow, James B. ( <i>See</i> Fisher, John T., assignor.)	
93,849	Clowser, Edward H., Boston, Mass. Food for horses and cattle.	Jan. 18, 1870
103,982	Cloyd, Henry C., West Alexandria, Ohio. Plow.	June 7, 1870
100,984	Cluckner, Joseph, Arcadia, Ind. Dirt-gauge for plows.	Mar. 22, 1870
108,569	Clute, Nicholas, Schenectady, N. Y., and Oliver W. Marshall, Hartford, Conn. Work-holder.	Oct. 25, 1870
101,586	Clinxton, Thomas M., Rising Sun, Ind. Wagon-axle.	April 5, 1870
103,143	Clymo, Henry, Galena, Ill. Latch for gates.	May 17, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,726	Coar, Robert B., Jersey City, N. J. Pipe-joint.....	Mar. 15, 1870
103,567	Same.....same.....	May 31, 1870
103,983	Coates, Joseph H., and George C. Miller. ( <i>See Miller &amp; Coates.</i> )	
98,668	Coates, Thomas, Ironton, Ohio. Chill-boshes for boiling and puddling furnaces.	June 7, 1870
	Coates, William B., assignor of one-half interest to Joseph Leeds, Philadelphia, Pa. Ice-creeper.....	Jan. 11, 1870
100,727	Same.....Concrete and wooden pavement.....	Mar. 15, 1870
106,327	Same.....Roofing-felt. (Antedated Aug. 4, 1870).....	Aug. 16, 1870
	Coats, Chandler C., <i>et al.</i> ( <i>See Hopper, Hopper &amp; Coats.</i> )	
103,984	Cobb, James J., Philadelphia, Pa. Sewing-machine.....	June 7, 1870
103,568	Cobb, Lucius J., Chicago, Ill. Resawing-machine.....	May 31, 1870
102,093	Cobb, Pleasant A., Lynchburg, Va. Extract for the cure of cancer and other diseases.....	April 19, 1870
104,427	Cobb, William A., Orange, Mass. Inclosed tail-race of water-wheels.....	June 21, 1870
103,718	Cobb, William Stokes, Philadelphia, Pa. Water-cooler.....	May 31, 1870
107,663	Cobb, Zenas, Chicago, Ill. Mode of inserting glass in vault-lights.....	Sept. 27, 1870
103,569	Coburn, Phinehas, East Walpole, Mass. Machine for calendering and polishing paper.....	May 31, 1870
102,777	Cochran, Frederick G., St. Louis, Mo. Heating-stove.....	May 10, 1870
100,376	Cochran, John, Purdy's Station, N. Y. Milk-can.....	Mar. 1, 1870
110,204	Cochran, John W., New York, N. Y. Car and other springs.....	Dec. 20, 1870
103,111	Cochran, Lemuel, Penn's Grove, N. J. Potato-digging machine.....	Nov. 8, 1870
105,910	Cochran, William M., Indianapolis, Ind. Sawing-machine.....	Aug. 2, 1870
3,998	Cochrane, John, Wall Township, N. J. Machine for forging or rolling screw-threads upon metal bolts..... (Reissue).....	May 31, 1870
106,256	Cochrane, John, Farmington, N. J. Railway-rail fastening.....	Aug. 9, 1870
100,377	Cochrane, John, jr., Malden, Mass. Carpet.....	Mar. 1, 1870
106,781	Same.....Driving-mechanism for sawing-machines.....	Aug. 16, 1870
110,112	Cocker, Peter, assignor to self and William I. McBride, Philadelphia, Pa. Woven fringed fabric.....	Dec. 13, 1870
105,175	Codd, Edward James, Baltimore, Md. Coffee-polisher.....	July 12, 1870
100,504	Codding, D. D., North Attleboro', Mass. Bracelet.....	Mar. 8, 1870
104,706	Codding, Fred W., West Ratland, Mass. Device for tendering or chopping meat.....	June 23, 1870
107,664	Coddington, Benjamin, Lafayette, Ind. Tin-roofing.....	Sept. 27, 1870
	Coe, George W. ( <i>See Odell &amp; Little, assignors.</i> )	
3,963	Coe, Samuel Sage, Cleveland, Ohio. Adjustable counting-house calendar.. (Design).....	April 12, 1870
103,144	Coeller, Frederick, assignor to Cornelius Walsh, New Haven, Conn. Traveling-bag fastener.....	May 17, 1870
	Coerver, John, and Frank Sauer. ( <i>See Sauer &amp; Coerver.</i> )	
100,602	Coes, Aury G., Worcester, Mass. Wrench.....	Mar. 8, 1870
102,371	Same.....Pipe-tongs.....	April 26, 1870
104,931	Same.....Machine for forging the heads of wrenches..... (Reissue).....	July 5, 1870
	Coes, Loring. ( <i>See Taft, George C., assignor.</i> ).....	
103,015	Same.....Worcester, Mass. Automatic friction dog-lathe chuck.....	May 17, 1870
103,328	Coester, Charles, jr., and James L. Moore, Bridgeport, Conn. Garter.....	Aug. 16, 1870
105,911	Coester, Henry, New York, N. Y. Extension gas-fixture.....	Aug. 2, 1870
101,351	Coffield, Timothy, Natrona, Pa. Fence.....	Mar. 29, 1870
108,969	Coffield, Timothy, and Benedic Egli, Natrona, Pa. Churn.....	Nov. 8, 1870
100,659	Coffin, D. N. B., jr., Newton Centre, Mass. Capstan.....	Mar. 15, 1870
4,100	Coffin, David N. B., jr., assignor through mesne assignments to self and Benjamin Woodward, Newton, Mass. Capstan and windlass..... (Reissue).....	Aug. 16, 1870
101,587	Coffin, Edwin F., Newburyport, Mass. Molding and clarifying horn.....	April 5, 1870
3,986	Same.....Comb..... (Design).....	April 26, 1870
	Coffin, Edward W., and C. F. A. Simonin. ( <i>See Simonin &amp; Coffin.</i> ) (Two cases.)	
	Coffin, George W., and Augustin F. Cloudman. ( <i>See Cloudman &amp; Coffin.</i> )	
102,656	Coffin, James H., Danielsville, Pa. Slate-frame clamp.....	May 3, 1870
4,215	Coffin, John M., Lehigh Township, Pa. Slate-frame..... (Design).....	July 12, 1870
107,226	Coffin, Mark, Milton, Ky. Ice-velocipede.....	Sept. 13, 1870
105,912	Coffin, Nathan T., Knightstown, Ind. Machine for securing sheet-metal lining in pump-stocks.....	Aug. 2, 1870
105,913	Same.....Pump-valve.....	Aug. 2, 1870
99,061	Coffin, T. S., Harrington, Me. Lifter for kitchen use.....	Jan. 25, 1870
	Coffin, William. ( <i>See Simonin &amp; Coffin, assignors.</i> )	
107,005	Coffin, Z. E., Newton, Mass. Device for lubricating, cooling, and washing vertical hammer-shafts or stamps.....	Sept. 6, 1870
108,970	Coggin, Frederick G., Burlington, Vt. Water-wheel.....	Nov. 8, 1870
	Cogill, John H. ( <i>See Thompson, George, assignor.</i> )	
103,985	Cogswell, Thomas, Boston, Mass. Cuff-supporter.....	Mar. 22, 1870
105,914	Cohen, Moses M., Boston, Mass. Chignon.....	Aug. 2, 1870
4,536	Cohen, Solomon L., assignor to Lawrence & Cohen, New York, N. Y. Back of a playing-card..... (Design).....	Dec. 27, 1870
4,537	Same.....Back of a playing-card..... (Design).....	Dec. 27, 1870
	Cohn, David. ( <i>See Taylor, Esau D., assignor.</i> )	
	Cohn, M., & Co., <i>et al.</i> ( <i>See Pratt, Charles E., assignor.</i> )	
99,062	Coignet, François, assignor to Coignet Agglomerate Company of the United States, France. Manufacture of artificial stone.....	Jan. 25, 1870
99,637	Coignet, François, assignor to La Société Centrale des Betons Systeme Coignet, France. Treating argillaceous limestone to obtain hydraulic cement, &c.....	Feb. 8, 1870
	Coit, Samuel. ( <i>See Arbeiter, Joseph, assignor.</i> ) (Reissue)..... (Two cases.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,329	Colahan, Samuel, Cleveland, Ohio. Straw-cutter .....	Aug. 16, 1870
93,562	Colburn, G. F. J., Newark, N. J. Bird-cage .....	Jan. 4, 1870
99,164	Same.....same .....	Jan. 25, 1870
100,603	Same.....Hand-rubber for washing clothes.....	Mar. 8, 1870
102,372	Colburn, Horace, assignor to self and Sylvester Colburn, Stafford, Conn. Die for forging ox-shoes .....	April 26, 1870
106,663	Colby, Charles, and Henry C. Ward, Benton Harbor, Mich. Fruit-box .....	Aug. 23, 1870
101,100	Colby, D. C., Washington, D. C. Street-pavement.....	Mar. 22, 1870
	Colby, Daniel C., <i>et al.</i> (See Hannen, H. S., assignor) .....	(Reissue.)
103,570	Colby, Eastman, Brockport, N. Y. Fruit-basket .....	May 31, 1870
100,119	Colby, Hall, assignor to self and George G. Colby, New York, N. Y. Altitude instrument .....	Feb. 22, 1870
105,781	Coldwell, Thomas, and George L. Chadborn, Newburgh, N. Y. Lawn-mower.....	July 26, 1870
103,299	Coldwell, Thomas, Newburgh, N. Y. Friction-clutch .....	Nov. 15, 1870
	Cole, Benjamin J. (See Cook, Jacob M., assignor.) .....	
103,971	Cole, Calvin, Ithaca, N. Y. Gate-latch.....	Nov. 8, 1870
100,860	Cole, Charles, assignor to self and Harvey Cole, Troy, N. Y. Railway-car axle .....	Mar. 15, 1870
104,272	Cole, Cyrus, Havana, N. Y. Stove-cover, dish and kettle lifter .....	June 14, 1870
98,563	Cole, Cyrus C., Phelps, N. Y. Draught attachment for horses.....	Jan. 4, 1870
99,537	Cole, Daniel, Scott Township, Pa. Trap .....	Feb. 8, 1870
103,452	Cole, Edward R. and Henry S., Pawtucket, R. I. Steam fire-engine .....	Oct. 18, 1870
3,874	Cole, G. W., Farmington, Ill. Cornstalk-cutter .....	Mar. 8, 1870
	Cole, Isaac, and John Stainthorp. (See Stainthorp & Cole.) .....	(Reissue.)
99,848	Cole, J. H., assignor to Samuel P. Emerson and Amos White, Millbury, Mass. Die and plunger .....	Feb. 15, 1870
110,343	Cole, James H., Chicago, Ill. Roofing material.....	Dec. 20, 1870
101,101	Cole, James R., Demopolis, Ala. Composition for the manufacture of tobacco-pipes, stems, and cigar-holders.....	Mar. 22, 1870
101,435	Cole, John H., Vacaville, Cal. Sulky-plow .....	April 5, 1870
103,719	Same.....Wheel-carriage seed-sower .....	May 31, 1870
100,604	Cole, Noah L., assignor to self and Albert N. Upham, Norwich, Conn. Machine for picking curled hair .....	Mar. 8, 1870
100,861	Cole, R. H. and G. F., Greenport, N. Y. Hay and cotton press .....	Mar. 15, 1870
103,331	Cole, Seth L., Brooklyn, N. Y. Forming cigar-tips.....	Oct. 18, 1870
	Cole, Seth L., and William G. Ayres. (See Ayres & Cole.) .....	
106,330	Cole, Stephen H., East Enterprise, Ind. Approach-gate .....	Aug. 16, 1870
106,551	Cole, William T., New York, N. Y. Chucks for holding pipes and tubes while being screw-threaded.....	Aug. 23, 1870
110,437	Same.....Die-plate for screw-cutting dies .....	Dec. 27, 1870
99,638	Coleman, Columbus, Allegheny City, Pa. Machine for bending rake-teeth.....	Feb. 8, 1870
101,230	Same.....same .....	Mar. 29, 1870
102,499	Coleman, Frank B., Southampton, Mass. Match-case .....	May 3, 1870
	Coleman, G. J., <i>et al.</i> (See Morgans, William T., assignor.) .....	
107,761	Coleman, George S., Alexandria, Va. Corn-sheller, &c. (Antedated Sept. 21, 1870) .....	Sept. 27, 1870
106,782	Coleman, Henry V., Chicago, Ill. Circulating water-heater for steam fire-engines .....	Aug. 30, 1870
103,016	Coleman, Isaac B., Detroit, Mich. Steam-trap .....	May 17, 1870
105,915	Coleman, Jesse C., and George Strayer, Clinton, Kansas. Wind-wheel.....	Aug. 2, 1870
102,500	Coleman, John, Lynchburg, Va. Car-coupling.....	May 3, 1870
99,639	Coleman, Stephen G., Providence, R. I. Rudder for vessels.....	Feb. 8, 1870
	Coleman, William. (See Evans, William, assignor.) .....	
	Colgrove, Eli J., and Stephen S. Wilcox. (See Wilcox & Colgrove.) .....	
110,205	Coll, Hugh, Millvale Borough, Pa. Ejector .....	Dec. 20, 1870
103,301	Colley, William H., Leavenworth, Kans. Lounge .....	May 24, 1870
109,589	Collier, Charles, Selma, Ala. Globe for gas-lights.....	Nov. 29, 1870
107,453	Collier, Orrin, and William H. Masterman, Sacramento, Cal. Balance slide-valve .....	Sept. 13, 1870
106,552	Collier, William F., Worcester, Mass. Dish-stand.....	Aug. 23, 1870
107,006	Same.....Wire for wire goods .....	Sept. 6, 1870
99,995	Collier, William F., assignor to Howe, Bigelow & Co., Worcester, Mass. Animal-trap .....	Feb. 15, 1870
105,176	Collins, Alfred S., Caledonia, N. Y. Spawning-screen.....	July 12, 1870
	Collins Company. (See Chapman, Luke, assignor.) .....	
	Same.....(See Jordan & Smith, assignors.) .....	
107,337	Collins, George, Fremont, Neb. Rotary harrow .....	Sept. 13, 1870
	Collins, Henry H. and Benjamin F. (See Wright, Homer, assignor.) .....	
	Collins, Jairus. (See Stephens, John, assignor.) .....	
	Collins, Jairus, and John Stephens. (See Stephens & Collins.) .....	
103,571	Collins, John F., and Arthur Neill, New York, N. Y. Button. (Antedated May 27, 1870) .....	May 31, 1870
102,501	Collins, John J. G., Philadelphia, Pa. Manufacture of malleable iron .....	May 3, 1870
	Collins, Joseph, and John B. Rittenhouse. (See Rittenhouse & Collins.) .....	
109,530	Collins, Matthew Grier, Meadville, Pa. Combined railroad-jack and pinch-bar..	Nov. 29, 1870
100,260	Collins, M. H., Chelsea, Mass. Lamp-burner.....	Mar. 1, 1870
103,972	Same.....Shade for lamp and gas-burners.....	Nov. 8, 1870
	Collins, Samuel C. (See Hindemeyer, Anthony J., assignor.) .....	
104,932	Collins, William A., Bloomfield, N. J. Fifth-wheel for carriages .....	July 5, 1870
99,640	Collinson, Henry, assignor to self and N. M. Hazen, Andover, Mass. Grate-bar .....	Feb. 8, 1870
105,553	Collom, John, Empire City, Col. Ter. Roasting-furnace for ores. (Antedated Aug. 15, 1870) .....	Aug. 23, 1870
106,554	Colson, James M., Morrill, Me. Horse bay-rake .....	Aug. 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,087	Colt, Calvin and Chester H., Jonesborough, Tenn. Mica chimney for lamps. (Design)	May 31, 1870
99,063	Colton, Aaron, Sycamore, Ill. Propeller	Jan. 25, 1870
101,588	Colton, Edward S., assignor to Colton Refrigerator Company, Boston, Mass. Refrigerator	April 5, 1870
110,438	Colton, Francis, Brooklyn, N. Y. Folding-chair	Dec. 27, 1870
100,728	Colton, Frederick P., and Peter Doyle. (See Doyle & Colton.) Colton, Henry R. S., Houghton, Mich. Safety-attachment for pockets Colt's Patent Fire Arms Manufacturing Company. (See Thuer, F. Alexander, assignor.)	Mar. 15, 1870
101,589	Same	same.
108,881	Colvin, Leighton O., New York, N. Y. Cow-milker. (Antedated Mar. 24, 1870)	April 5, 1870
108,882	Same.....Humphreyville, Pa. same	Nov. 1, 1870
107,665	Same.....Newark, N. J. Breast-pump	Nov. 1, 1870
108,108	Colwell, William S., Pittsburgh, Pa. Blower	Sept. 27, 1870
102,502	Combination Rubber Company <i>et al.</i> (See Perry & Manheim, assignors.) (Re-issue.)	
102,224	Combs, Richard J., Bergen, N. J. Brush	Oct. 11, 1870
106,124	Combs, Roy, and Henry J. Leasure, Wheeling, W. Va. Pot for smelting glass	May 3, 1870
98,743	Combs, Thomas, Yonkers, N. Y. Ointment	April 26, 1870
108,973	Comegys, Henry C., and Charles F. Smith. (See Klaucke, Alexander A. C., assignor.)	
103,017	Comins, James M., New York, N. Y. Railroad-car stove	Aug. 9, 1870
4,346	Comins, Thomas Babbitt, jr., Lowell, Mass. Folding-chair	Jan. 11, 1870
99,294	Same.....same	Nov. 8, 1870
100,729	Comly, John P. (See Wells, Richard P., assignor.)	
107,878	Comly, Joshua, Philadelphia, Pa. Gas-heater	May 17, 1870
103,428	Same.....Combined top-plate combustion and air-chamber of a vapor generator and burner (Design)	Sept. 13, 1870
103,985	Commings, John, Charleston, S. C. Fertilizer	Feb. 1, 1870
101,102	Same.....same	Mar. 15, 1870
107,454	Same.....Manufacture of fertilizers	Oct. 4, 1870
107,879	Compton, John R., and Crowell M. Toms, assignors to selves and Albert Asmann, Rahway, N. J. Oil-can	May 24, 1870
103,018	Comstock, Alonzo, and James H. Nicholson, Chicopee, Mass. Carriage-curtain button	June 7, 1870
107,880	Comstock, Charles H., Chebanse, Ill. End-gate for grain-wagons	Mar. 22, 1870
100,261	Comstock, Francis M., assignor to self, George W. Howe, and David M. Somerville, Cleveland, Ohio. Knitting-machine	Sept. 20, 1870
99,641	Comstock, James, assignor to self and John W. Comstock, Greenfield, Ind. Fence	Oct. 4, 1870
3,949	Comstock, Joseph J., and James Aborn Cloth, Providence, R. I. Manufacture of imitation hair-cloth	May 17, 1870
106,555	Comstock, Levi Richardson, Keokuk, Iowa. Water-cooler and refrigerator	Oct. 4, 1870
105,046	Comstock, Peter. (See Bigelow, Elijah K., assignor.)	
107,163	Conant, C. B., and H. Thompson, Worcester, Mass. Spoke-lathe	Mar. 1, 1870
3,950	Conant, Hezekiah, Providence County, R. I. Machine for combing cotton, &c.	Feb. 8, 1870
108,109	Same.....Pawtucket, R. I. Spool for thread (Design)	April 5, 1870
108,110	Conant, Leander T., New Lisbon, Ohio. Automatic buggy-brake	Aug. 23, 1870
99,642	Conant, William E., and George W. Hubbard. (See Hubbard & Conant.) (Re-issue.)	
105,046	Conard, William, Burlington, N. J. Railroad-car ventilator	July 5, 1870
107,163	Same.....Deflector for windows of railroad-cars (Design)	Sept. 6, 1870
3,950	Condon, Charles, Rochester, N. Y. Pruning-shears	April 5, 1870
108,109	Cone, Francis C., San Francisco, Cal. Candlestick	Oct. 11, 1870
108,110	Same.....Fountain-pen	Oct. 11, 1870
99,642	Cone, J., and William K. Kelly, Bristol, Pa. Furnace grate-bar	Feb. 8, 1870
105,305	Cone, John E., Chicago, Ill. Gas-heater	July 12, 1870
110,013	Congle, George J., Chippewa Falls, Wis. Table	Dec. 13, 1870
98,564	Conklin, Edward, and Franklin Whitmore. (See Whitmore & Conklin.)	
100,730	Conklin, Hamilton W. (See Bestor, Samuel J., assignor.)	
101,436	Conklin, Henry N., Indianapolis, Ind. Shoulder-brace	Jan. 4, 1870
104,933	Conklin, Hiram M., Carlstadt, N. J. Compound for making concrete pavements	Mar. 15, 1870
101,437	Conklin, Theodore, Fond du Lac, Wis. Machine for cutting locks in hoops	April 5, 1870
105,550	Conklin, Theodore F., Fond du Lac, Wis. Cover for pails, firkins, &c.	July 5, 1870
103,572	Conklin, William G., and Samuel H. Sheplar. (See Sheplar & Conklin.)	
106,331	Conley, Edward, Cincinnati, Ohio. Railroad-station indicator	April 5, 1870
105,306	Connel, James M., Newark, Ohio. Harvester-cutter	July 19, 1870
105,340	Connel, Nathaniel B. (See Trunick, William B., assignor.)	
108,762	Connelly, Joseph H., and John McLure, Wheeling, West Va. Collecting, separating, and purifying the gases from furnaces	May 31, 1870
109,805	Connelly, Richard H., Philadelphia, Pa. Paddle-wheel	Aug. 16, 1870
101,103	Conner, Andrew Jackson, Louisville, Ky. Cistern influx-regulator	July 12, 1870
105,649	Conner, James, Richmond, Ind. Sad-iron. (Antedated July 15, 1870)	July 26, 1870
110,114	Conner, Joseph, Philadelphia, Pa. Steam-pipe coupling for railroad-cars	Dec. 13, 1870
108,762	Conner, Michael, Plymouth, Mich. Tinsmiths' furnace	Nov. 1, 1870
109,805	Same.....same	Dec. 6, 1870
101,103	Connor, Henry W., Richmond, Ind. Washing-machine	Mar. 22, 1870
110,340	Conover, Daniel B. New Bedford, N. J. Harrow	Dec. 20, 1870
108,111	Conover, George, Mott Haven, N. Y. Syringe	Oct. 11, 1870
104,558	Conrad, Ernst Eustach, assignor to Henry Coulter and Barton H. Jones, Philadelphia, Pa. Lamp-shade supporter. (Antedated June 13, 1870)	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,227	Conradt, Augustus, Philadelphia, Pa. Handle of spoons and other articles. (Design) .....	July 19, 1870
104,707	Consalvi, Alexander A., New York, N. Y. Street-sweeping machine. (Ante-dated June 13, 1870) .....	June 28, 1870
109,179	Constantine, James, Mansfield, La. Rotary engine .....	Nov. 15, 1870
	Continental Windmill Company. (See Brown, Addison P., assignor.)	
	Same .....	same (Reissue.)
104,115	Convers, Eugene, Oswego, N. Y. Oil-cup and bearing for spindles .....	June 14, 1870
104,116	Same .....	June 14, 1870
106,664	Converse, Charles C., Brooklyn, N. Y. Mucilage-holder .....	Aug. 23, 1870
100,605	Converse, Mack D., London, Ohio. Brad-setter .....	Mar. 8, 1870
104,831	Converse, Mack Delorimer, London, Ohio, and Frank Atwell Bates, Boston, Mass. Rubber-eraser .....	June 28, 1870
105,916	Conzelman, John, St. Louis, Mo. Cough-syrup .....	Aug. 2, 1870
93,526	Coogan, Edward, Washington, D. C. Chair-tip .....	Jan. 18, 1870
108,883	Coogan, Edward, assignor to self and Joseph L. Simons, Washington, D. C. Wood-splitting machine .....	Nov. 1, 1870
100,120	Cook, Abel D., and James Graves, New Madrid, Mo. Feather-renovator .....	Feb. 22, 1870
110,206	Cook, Daniel McFarland, Mansfield, Ohio. Galvanic battery .....	Dec. 20, 1870
104,117	Cook, Daniel P., Hartford, Conn. Self-protector .....	June 14, 1870
100,014	Cook, Elbert P., Cartersville, Ga. Head-rest .....	Feb. 22, 1870
103,019	Cook, George, New Haven, Conn. Sub-base reed-organ couplers .....	May 17, 1870
102,373	Cook, Hanson, New Bridgeport, Pa. Washing-machine .....	April 26, 1870
	Cook, Harrison F. (See Harvey, Moses B., assignor.)	
98,927	Cook, Henry, Washington, D. C. Telegraphic apparatus .....	Jan. 18, 1870
	Cook, Henry W., et al. (See Jordan, William N., assignor.)	
107,338	Cook, Hezekiah, Dillsburgh, Pa. Grain-separator .....	Sept. 13, 1870
99,849	Cook, Hiram, Norwich, Conn. Fish-joint for railway-rails .....	Feb. 15, 1870
93,408	Cook, J. C., New Haven, Conn. Apparatus for administering medicated vapors .....	Feb. 1, 1870
107,007	Cook, Jacob M., assignor of one-half interest to Benjamin J. Cole, Lake Village, N. H. Water-wheel .....	Sept. 6, 1870
106,783	Cook, James V., and Edward J. Crossman, Auburn, N. Y. Scaffolding .....	Aug. 30, 1870
99,643	Cook, John H., assignor to Hagerstown Agricultural Implement Manufacturing Company, Hagerstown, Md. Horse hay-rake .....	Feb. 8, 1870
	Cook, Joseph, et al. (See Phelps, Augustus H., assignor.)	
108,763	Cook, Leeds A., Concord, Mich. Sliding-door .....	Nov. 1, 1870
103,429	Cook, Roswell F., assignor to Sparrow & Swan, Potsdam, N. Y. Brad-punch .....	May 24, 1870
	Cook, Simeon S. (See Lofvendahl, Joseph, assignor.)	
109,180	Cook, William H., Bergen, N. J. Rocking-chair and step-ladder .....	Nov. 15, 1870
	Cooke, Augustus D., and Thomas B. Fitts. (See Fitts & Cooke.)	
100,862	Cooke, Edward L., Hartford, Conn. Orange-knife .....	Mar. 15, 1870
3,818	Cooke, George, New Haven, Conn. Organ or melodeon case .....	Jan. 18, 1870
100,505	Cooke, James C., assignor to DeWitt C. Sage, Bridgeport, Conn. Sash-bolt .....	Mar. 8, 1870
102,503	Cooke, Matthew, Sacramento, Cal. Apparatus for blasting logs. (Antedated April 27, 1870) .....	May 3, 1870
101,231	Cooke, Robert F., Brooklyn, N. Y. Cotton-picker .....	Mar. 29, 1870
103,986	Same .....	June 7, 1870
102,225	Cooke, Sydney, assignor to self and Frederick C. Bulkley, Bayonne City, N. J. Dredge-box, cake-cutter, and grater .....	April 26, 1870
99,165	Cooke, Watts, Paterson, N. J. Railroad-rail and base-plate .....	Jan. 25, 1870
103,987	Cookerly, John A., Middletown, Md. Quilting-frame .....	June 7, 1870
105,650	Cool, Emanuel and Sadisca, Buckhannon, West Va. Washing-machine .....	July 26, 1870
109,387	Cooley, DeWitt C., Wilkesbarre, Pa. Washing-machine. (Antedated Nov. 9, 1870) .....	Nov. 22, 1870
104,118	Cooley, Eli P., New York, N. Y. Broom and whisk .....	June 14, 1870
104,559	Cooley, Newton C., Wyoming, Del. Fruit-drier .....	June 21, 1870
107,455	Cooldidge, John K., and Nathan H. Hill, Cincinnati, Ohio. Folding or knock-down chair .....	Sept. 20, 1870
99,850	Coolman, Grant T., and Charles M. Young, Corry, Pa. Harvester .....	Feb. 15, 1870
105,430	Coombes, Eden M., Memphis, Ind. Hominy-mill .....	July 19, 1870
99,644	Coombs, Charles L., Washington, D. C. Toy .....	Feb. 8, 1870
98,505	Coombs, William C., and James M. Gray, Memphis, Ind. Hominy-mill .....	Jan. 4, 1870
106,556	Coombs, William G., New Gloucester, Me. Plow .....	Aug. 23, 1870
	Coon, John S., and James C. Beddoe. (See Beddoe & Coon.)	
106,032	Coon, John V., Elyria, Ohio. Sewing-machine .....	Aug. 2, 1870
98,928	Coon, S. Park, assignor to Caleb Crosswell, Sarah V. Coon, and Susan M. Hunter, Milwaukee, Wis. Skipping-rope .....	Jan. 18, 1870
105,307	Coon, S. Park, assignor to self and David G. Power, Milwaukee, Wis. Fence .....	July 12, 1870
101,104	Coon, William S., Rochester, N. Y. Treadle .....	Mar. 22, 1870
102,226	Cooney, William, Bridgeport, Conn. Sewing-machine .....	April 26, 1870
102,227	Cooper, Albert, Harrisburgh, Pa. Sash-lock .....	April 26, 1870
100,262	Cooper, Almond F., San Francisco, Cal. Foundation for buildings .....	Mar. 1, 1870
102,657	Same .....	May 3, 1870
103,573	Same .....	May 31, 1870
99,851	Cooper, Almond F., assignor to self and John G. Tappan, San Francisco, Cal. Wheel for carriages and other vehicles .....	Feb. 15, 1870
105,308	Cooper, Emmett, Theresa, N. Y. Hay-loader .....	July 12, 1870
100,015	Cooper, H. B., Memphis, Tenn. Bee-hive .....	Feb. 22, 1870
109,716	Cooper, Matthew M., and James W. Donaldson, Fairfield, Cal. Riddle for separating grain .....	Nov. 29, 1870
98,566	Cooper, William, Independence, Iowa. Clothes-wringer .....	Jan. 4, 1870
105,651	Cooper, William H., Glover, Vt. Rein-holder .....	July 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,145	Cooper, William S., Philadelphia, Pa. Faucet.....	May 17, 1870
109,388	Cooper, William S., assignor to Cooper, Jones & Cadbury, Philadelphia, Pa. Steam-whistle.....	Nov. 22, 1870
103,845	Copcutt, F. W., and George W. Ladd. (See Ladd & Copcutt.) Cope, David, England. Cask-filler.....	June 7, 1870
105,177	Cope, Ezra, and James R. Maxwell. (See Maxwell & Cope.) Cope, John D., et al. (See Filson, Filson & Cope.) Cope, J. E., et al. (See Pollard, Thomas, assignor.) Copeland, Charles W., New York, N. Y. Safety hoisting-apparatus.....	July 12, 1870
102,504	Copeland, George, Denver, Colorado Territory. Horse-shoe.....	May 3, 1870
103,574	Same..... Ore-separator.....	May 31, 1870
107,456	Copeland, Ira, North Bridgewater, Mass. Horse-hoe.....	Sept. 20, 1870
101,352	Copeley, Humphrey E., Brooklyn, N. Y. Rivet.....	Mar. 29, 1870
107,339	Copenhagen, Jacob D., Martinsburgh, West Va. Charring barrel-heads.....	Sept. 13, 1870
	Copp, C. D. & E. J. (See McClure, Jacob, assignor.) Coppock, Henry H., et al. (See Tucker, Williams & Coppock.) Corbet, Paul and Lessieux. (See Hertz, Conrad, assignor.) Corbett, Augustus O. (See Hussey, Roland C., assignor.) Corbett, Cooper E., Binghamton, N. Y. Culinary vessel.....	Mar. 15, 1870
110,014	Corbett, Henry V., assignor to George W. Amigh, Allendale, Mich. Corn-cutter.....	Dec. 13, 1870
109,717	Corbett, Joseph, Brooklyn, N. Y. Padlock.....	Nov. 29, 1870
109,718	Corbett, Joseph, Brooklyn, and Franklin W. Brooks, New York, N. Y., assignors to the American Seal Lock Company. Seal-lock.....	Nov. 29, 1870
	Corbin, A., and S. C. Catlin. (See Catlin & Corbin.) Corbin, Elijah H., Winchester, Ind. Circular saw-jointer.....	Dec. 6, 1870
109,806	Corbin, John P., and Joseph P. Adams. (See Adams & Corbin.) Corbin P. and F. (See Fracker, F. T., assignor)..... (Reissue of design.) Same..... (See Munger, W. T., assignor)..... (Four cases.) Same..... (See Arnold, Stephen D., assignor.) Same..... (See Summers, Lucius P., assignor)..... (Two cases.)	
109,719	Corbin, Squire W., Cambridge, N. Y. Harrow-teeth.....	Nov. 29, 1870
110,551	Corby, Emmons B., Bloomfield, N. J. Clothes-drier.....	Dec. 27, 1870
100,606	Corey, G. W., and Thomas Losie, New York, N. Y. Floating-ship. (Antedated Feb. 28, 1870).....	Mar. 8, 1870
103,884	Corey, James W., Newark, N. J. Brim for soft-hats.....	Nov. 1, 1870
	Corey, Thomas, et al. (See Stearns, Caleb S., assignor)..... (Reissue.) Corfield, William, and Samuel Woolston. (See Woolston & Corfield.) Corkhill, Henry R., and Samuel Fawcett. (See Fawcett & Corkhill.) (Design.)	
106,655	Corne, William F., New York, N. Y. Hand-stamp.....	Aug. 23, 1870
106,784	Cornelius, George F., England. Manufacture of paint and varnish.....	Aug. 30, 1870
101,983	Cornell, Abe C., St. Louis, Mo. Shutter-worker. (Antedated April 14, 1870).....	April 19, 1870
	Cornell, Ezra. (See Chase, Alonzo, assignor.) Cornell, Leffert Ryerson, Flatbush, N. Y. Steam-generator.....	Dec. 6, 1870
	Cornell, Thomas L. and Sidney. (See McChesney, Reuben, assignor.) Cornell, Ward & Comings. (See Leslie, Arthur M., assignor)..... (Two cases.)	
100,986	Corning, Jasper E., Rye, N. Y. Locking-device for traps.....	Mar. 22, 1870
3,898	Cornuwell, Willett and Elmira, Rochester, Minn. Pattern or chart for applying measurements and laying out dress-waists..... (Design).....	Mar. 15, 1870
104,428	Corpe, Alpheus C., Stafford, Conn. Water-wheel.....	June 21, 1870
103,020	Correll, William Hurd, Nashville, Ohio. Shaft-tug.....	May 17, 1870
	Corrister, W. D., and Susan R. Knox. (See Knox & Corrister.)..... (Reissue.)	
103,575	Corsa, William Pinckney, Catskill, N. Y. Machine for cutting, printing, and folding paper.....	May 31, 1870
107,597	Corse, Albert C., Troy, N. Y. Base-burning coal-stove.....	Sept. 20, 1870
	Same..... (See Fagan, Michael G., assignor.) Corser, George A. (See Hankey, Anthony, assignor.)	
110,207	Corson, Richard B. and Henry, Henry County, Mo. Corn-planter.....	Dec. 20, 1870
101,713	Cortrite, Barnard, Norwalk, Ohio. Fanning-mill.....	April 12, 1870
110,115	Corwin, Eugene P., Washington, Ill. Buckle.....	Dec. 13, 1870
109,389	Corwin, John W., Lebanon, Ohio. Potato-digger.....	Nov. 22, 1870
103,846	Cory, A. Morrell, New Providence, N. J. Buggy-top bed.....	June 7, 1870
4,104	Same..... Buggy-top..... (Reissue).....	Aug. 23, 1870
104,832	Cory, Jeremiah, Holden, Mo. Bee-protector.....	June 28, 1870
103,146	Cory, John F., and Jacob H. Brown, Brooklyn, E. D., N. Y. Hand-stamp for cutting checks, bonds, &c.....	May 17, 1870
103,720	Cory, John F., and Henry C. Webb, Brooklyn, E. D., N. Y. Blacksmiths' bellows.....	May 31, 1870
107,457	Cosand, Joseph, Russiaville, Ind. Corn-planter.....	Sept. 20, 1870
109,112	Cosolowsky, John, Titusville, Pa. Animal-trap.....	Nov. 8, 1870
104,833	Costello, Charles J., Kingston, and John Costello, New York, N. Y. Music-note block.....	June 23, 1870
104,560	Cote, Louis, St. Hyacinth, Canada. Sole-edge finishing-machine for boots and shoes.....	June 21, 1870
109,300	Same..... Apparatus for trimming heels of boots and shoes.....	Nov. 15, 1870
105,305	Cotam, Edward, England. Smoking-pipe.....	July 12, 1870
105,551	Cotten, Thomas L., assignor to Martha J. Cotten, Madison County, Miss. Subsoil-plow.....	July 19, 1870
106,125	Same..... Manure-cart.....	Aug. 9, 1870
108,453	Same..... Medical compound for hog-cholera.....	Oct. 18, 1870
104,703	Cottingham, Gideon W., Marshall, Texas. Washing-machine.....	June 23, 1870
108,454	Cottingham, John C., Philadelphia, Pa. Boat-detaching apparatus.....	Oct. 13, 1870
110,116	Same..... same.....	Dec. 13, 1870
106,785	Cottle, Edward, Randolph, Mass. Book-marker.....	Aug. 30, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,917	Cotton, James B., Dayton, Ohio. Automatic gate.....	Aug. 30, 1870
102,229	Cottrell, Henry C., assignor to W. H. Hayward, Norwich, Conn. Ventilated rubber-boot.....	April 26, 1870
99,409	Couch, Alfred B., Worcester, Mass. Machine for planing iron.....	Feb. 1, 1870
103,031	Same.....Shaping-machine.....	May 17, 1870
109,181	Coughlan, Thomas, Newton, Mass. Gun-carriage.....	Nov. 15, 1870
107,762	Coughlin, William, Clarksville, Ohio. Adjustable stop for casters for stove-legs.....	Sept. 27, 1870
104,273	Coulston, Thomas J., assignor to Enos S. Shantz, and Oliver B. Keely, Royer's Ford, Pa. Combined stove-lid and cover.....	June 14, 1870
104,274	Same.....Heating-stove.....	June 14, 1870
	Coulter, Henry. (See Croft, Edward, assignor.)	
	Coulter, Henry, <i>et al.</i> (See Conrad, Ernst Eustach, assignor.)	
98,850	Coulter, James, and Herbert Harpin, England. Stone-dressing machine.....	Jan. 18, 1870
103,576	Coulton, Charles J., Seville, Ohio, Engraving-machine.....	May 31, 1870
102,917	Courtney, William, Richview, Ill. Bee-hive.....	May 10, 1870
107,666	Courts, Richard Winn, Russellville, Ky. Roller for sewing-machine.....	Sept. 27, 1870
98,669	Courvoisier, Auguste, Denver, Colorado Territory, Time-register for hiring purposes.....	Jan. 11, 1870
104,429	Coutant, John E., Rondout, N. Y. Sled-brake.....	June 21, 1870
107,227	Covart, William, Claytonville, Kansas. Stone-adze.....	Sept. 13, 1870
99,410	Covell, E. T., Brooklyn, N. Y. Soldering-machine.....	Feb. 1, 1870
103,988	Same.....Metallic cap and nozzle.....	June 7, 1870
104,275	Same.....Reversible cap and spout for oil-cans.....	June 14, 1870
104,430	Same.....Nozzle and cap for oil-cans.....	June 21, 1870
104,431	Same.....Soldering-machine. (Antedated June 6, 1870).....	June 21, 1870
106,257	Same.....Machine for soldering metallic vessels.....	Aug. 9, 1870
107,458	Same.....Soldering-machine. (Antedated Sept. 10, 1870).....	Sept. 20, 1870
108,764	Covell, John S., Salt River, Mich. Gate.....	Nov. 1, 1870
103,302	Covey, Erastus G., and Addison Birch, Marshall, Mich. Weather-strip for doors.....	May 24, 1870
107,008	Cowell, Rensselaer A., Cleveland, Ohio. Railway-car coupling. (Antedated July 15, 1870).....	Sept. 6, 1870
108,885	Same.....Earth-closet.....	Nov. 1, 1870
105,310	Cowgill, Oliver R., Pana, Ill. Reservatory for groceries, &c.....	July 12, 1870
102,229	Cowing, George, Seneca Falls, N. Y. Fire-extinguisher. (Antedated April 16, 1870).....	April 26, 1870
101,827	Cowing, Marshall, assignor to self, John P., Philo, and George Cowing, New York, N. Y. Railroad-tank valve.....	April 12, 1870
101,590	Cowing, Turner, assignor to Tallmadge E. Brown, San Francisco, Cal. Wood-pavement.....	April 5, 1870
110,439	Cowing, William J. Fastening for neckties.....	Dec. 27, 1870
	Cowles, C., & Co. (See Hine, Merrit, assignor.)	
103,022	Cowles, Charles H., Nebraska City, Neb. Seeding-machine.....	May 17, 1870
103,847	Cowles, Edwin, Cleveland, Ohio. Mechanical movement for sewing-machine, &c.....	June 7, 1870
100,864	Cowles, Frederick A., assignor to self and J. B. Savage, Plantsville, Conn. Body-loop for carriages.....	Mar. 15, 1870
104,119	Cowles, George B., Bridgeport, Conn. Pulley.....	June 14, 1870
109,870	Cowles, James A., Chicago, Ill. Journal-lubricator. (Antedated Nov. 30, 1870).....	Dec. 6, 1870
109,871	Cowles, Lorenzo Dow, Romeo, Mich. Buckles.....	Dec. 6, 1870
110,117	Cowley, David, Erie, Pa. Car axle-box cover.....	Dec. 13, 1870
110,208	Cowngill, James, Philadelphia Pa. Stopping-mechanism for looms.....	Dec. 20, 1870
102,230	Cox, Albert W., Indianapolis, Ind. Drier.....	April 26, 1870
98,470	Cox, Albert W., and William Gause, Indianapolis, Ind. Drier.....	Jan. 4, 1870
	Cox, Andrew W., <i>et al.</i> (See Rider, Samuel, assignor.)	
98,471	Cox, Bowman, S., Paulsborough, N. J. Cultivator.....	Jan. 4, 1870
	Cox, Church & Co. (See Ham, Robert, assignor.)	
	Cox, Hiram, <i>et al.</i> (See Barber & Wolf, assignors.)	
101,353	Cox, James E., Cincinnati, Ohio. Apparatus for keeping pure the air in the manufacture of fertilizers.....	Mar. 29, 1870
107,164	Same.....Coffin.....	Sept. 6, 1870
99,064	Cox, John, Lane County, Oregon. Mortising-machine.....	Jan. 25, 1870
	Same.....(See Horner, James, assignor.)	
99,538	Cox, John and Solomon, Eugene City, Oregon. Gang-plow.....	Feb. 8, 1870
	Cox, John, and Cyrus Roberts. (See Roberts & Cox).....(Extension.)	
109,390	Cox, Kenyon, and Theodore. New York, N. Y. Water-wheel.....	Nov. 22, 1870
	Cox, Milton O., <i>et al.</i> (See Curtis, Briggs, & Cox).....(Design.)	
99,852	Cox, Richard D., Philadelphia, Pa. Brick-kiln.....	Feb. 15, 1870
101,714	Cox, William H. Knox County, Ill. Washing-machine.....	April 12, 1870
107,064	Coykendall, Jonathan, Farmington, Ill. Shoe-fastening.....	Sept. 6, 1870
102,374	Coyle, Patrick H., Newark, N. J. Boiler-tube cleaner.....	April 26, 1870
	Cozad, F. W. (See Chadwick, Thomas, assignor.)	
104,276	Crabtree, George W., and John G. Stokes, Chocoville, Ark. Composition for tanning.....	June 14, 1870
4,448	Crabtree, Jonathan, Philadelphia, Pa. Carpet-pattern.....(Design).....	Nov. 1, 1870
3,837	Crabtree, Jonathan, assignor to William Hogg, jr., Philadelphia, Pa. Carpet-pattern.....(Design).....	Feb. 8, 1870
3,838	Same.....Carpet-pattern.....(Design).....	Feb. 8, 1870
4,026	Crabtree, Jonathan, assignor to James Bromley and Brothers, Philadelphia, Pa. Carpet-pattern.....(Design).....	May 17, 1870
4,027	Same.....Carpet-pattern.....(Design).....	May 17, 1870
4,305	Same.....same.....(Design).....	Aug. 30, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,253	Crabtree, Jonathan, assignor to John Gay, Philadelphia, Pa. Carpet-pattern. (Design).....	July 19, 1870
4,398	Same..... Carpet-pattern..... (Design).....	Oct. 11, 1870
4,420	Same..... same..... (Design).....	Oct. 18, 1870
103,577	Craig, Isaac E., Camden, Ohio. Manufacture of sheet-iron.....	May 31, 1870
100,378	Craig, James A. (See Douglas, Joseph V., assignor.)	
109,113	Craig, R. S., and A. H. Woodward, Dover, N. Y. Machine for sawing marble...	Mar. 1, 1870
109,113	Craig, William, Newark, N. J., and Henry L. Brevoort, Brooklyn, N. Y. Condenser for steam-pumps.....	Nov. 8, 1870
103,721	Craigie, Hugh H., New York, N. Y. Water-closet valve.....	May 31, 1870
104,934	Same..... Automatic water-elevating apparatus. (Antedated June 29, 1870).....	July 5, 1870
107,459	Crailsheim, Charles Frederick, and John F. Kulby. (See Kulby & Crailsheim.)	
108,974	Crain, William, Millgrove, Ind. Device for balancing fanning-mill shoes.....	Sept. 20, 1870
109,182	Crallé, Edward A., jr., Brickland, Va. Straw-cutter.....	Nov. 8, 1870
106,666	Cram, Alonzo W., St. Louis, Mo. Lock for railroad-switches.....	Nov. 15, 1870
104,834	Cramer, Adon W., Honesdale, Pa. Bed-bottom.....	Aug. 23, 1870
108,006	Crandall, Edward M., Marshalltown, Iowa. Broom.....	June 28, 1870
98,929	Same..... Life-preserver. (Antedated Sept. 26, 1870).....	Oct. 4, 1870
3,971	Crandall, Amasa B., and Loren R. Witherell. (See Witherell and Crandall.)	
104,277	Crandall, Benjamin P., New York, N. Y. Rocking-horse.....	Jan. 18, 1870
106,126	Crandall, Benjamin P., assignor to self, William E., and Charles F. Crandall, New York, N. Y. Children's carriage.....	May 17, 1870
98,930	Crandall, Benjamin P., jr., Williamsburgh, N. Y. Spring for vehicles.....	June 14, 1870
98,670	Same..... Sleigh and carriage for children.....	Aug. 9, 1870
99,166	Crandall, Edwin G., Belfast, N. Y. Horse hay-fork.....	Jan. 18, 1870
100,263	Crandall, Jesse A., Brooklyn, N. Y. Children's carriage.....	Jan. 11, 1870
110,118	Same..... Velocipede.....	Jan. 25, 1870
100,121	Same..... Rocking-horse.....	Mar. 1, 1870
3,972	Crandall, Lucius, New York, N. Y. Furnace for burning shavings.....	Dec. 13, 1870
106,033	Crandall, William E., New York, N. Y. Children's carriage.....	Feb. 22, 1870
99,853	Same..... same..... (Reissue).....	May 17, 1870
108,455	Same..... Handle for children's carriages and perambulators.....	Aug. 2, 1870
109,301	Crandell, Germond, Washington, D. C. Instrument for describing spirals, &c.....	Feb. 15, 1870
102,918	Same..... Pen.....	Oct. 18, 1870
99,761	Crane, Asahel G., and William T. Johnston, Ottumwa, Iowa. Harvester-rake.....	Nov. 15, 1870
100,731	Crane, Edwin J., La Porte, Ind. Paper-file.....	May 10, 1870
4,059	Crane, Jason. (See Fowler, Henry, assignor.)	
100,122	Crane, John E., et al. (See Abel, William H., assignor)..... (Three cases.)	
104,835	Crane, Jonathan T., and Joel Laforge. (See Laforge & Crane.)	
101,828	Crane, Moses G., Newton, and A. M. Polsey, Boston, Mass., assignors to William Smith Hall. Friction-clutch mechanism.....	Feb. 15, 1870
106,258	Crane, Oscar N., et al. (See Morehouse, Clark, assignor.)	
108,765	Crane, P. M., and Edward V. Gardner. (See Gardner & Crane.)	
4,207	Crane, Richard T., Chicago, Ill. Machine for drilling and tapping gas-fittings..	Mar. 15, 1870
104,836	Cranford, Henry L., Brooklyn, N. Y. Composition pavement..... (Reissue).....	July 5, 1870
98,671	Cranford, Peter S., assignor to J. N. Whidden, Union, Ill. Thill-coupling.....	July 12, 1870
107,667	Cranford, Peter S., assignor to J. N. Whidden, Union, Ill. Thill-coupling.....	July 12, 1870
105,178	Crawford, Samuel, et al. (See Bennor, Joseph, assignor.)	
101,105	Crawford, Timothy R., et al. (See Battersby, William Augustus, assignor.)	
3,883	Crawford, William, and Samuel Clarke, assignors to selves and J. D. McDonald, Telford & Co., Attica, Ind. Stopping and starting mill-burrs.....	Mar. 22, 1870
102,919	Crawley, Edwin, and Thomas L. Baylies, Richmond, Ind. Vise..... (Reissue).....	Mar. 22, 1870
100,264	Same..... same.....	May, 10, 1870
100,265	Cremer, George N., Trenton, N. J. Safety-hatch for buildings.....	Mar. 1, 1870
109,391	Same..... Self-acting hatchway-hoist.....	Mar. 1, 1870
106,557	Same..... Lathing-machine.....	Nov. 23, 1870
98,744	Cree, James T., Worcester, Mass. Bottle-stopper.....	Aug. 23, 1870
109,872	Cremin, Joseph W., New York, N. Y. Gas-burner.....	Jan. 11, 1870
109,873	Cresson, Charles M., assignor to American Wood Protection Company, Philadelphia, Pa. Seasoning and preserving wood.....	Dec. 6, 1870
109,874	Same..... same.....	Dec. 6, 1870
103,989	Same..... Treating and recovering the liquids used in seasoning and preserving wood.....	Dec. 6, 1870
103,990	Creuzbaur, Robert, Brooklyn, Eastern District, N. Y. Liquid-meter.....	June 7, 1870
109,183	Same..... same.....	June 7, 1870
108,456	Same..... Williamsburgh, N. Y. Steam-tiller.....	Nov. 15, 1870
100,987	Criehfield, Aylett, Lincoln, Ill. Wash-board.....	Oct. 18, 1870
102,231	Crinklaw, William S., Lanark, Ill. Mop-head.....	Mar. 22, 1870
	Crippen, Warren S., Grand Rapids, Mich. Spring bed-bottom.....	April 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,991	Cristy, Henry F., Charlestown, Mass. Penman's wrist-supporter .....	June 7, 1870
106,918	Croasdale, Benjamin R., Philadelphia, Pa. Fertilizer. (Antedated Aug. 19, 1870).	Aug. 30, 1870
100,732	Crocker, Eleazer F., Niles, Mich. Turbine water-wheel .....	Mar. 15, 1870
108,570	Crocker, George D., Virginia City, Nev. Stamp-battery .....	Oct. 25, 1870
99,854	Crocker, John D., Norwich, Conn. Picture-frame fastening .....	Feb. 15, 1870
106,332	Same..... Stretcher for picture-frames .....	Aug. 16, 1870
108,975	Crockett, Robert S., Rossville, S. C. Plow .....	Nov. 8, 1870
	Crockett, Seldon L. (See Bradshaw & Crockett, assignors.)	
100,123	Crofoot, Leonard, Pavilion, N. Y. Bag-holder .....	Feb. 22, 1870
109,392	Croft, Albert J., Williamsport, Pa. Bed-plate for saw-mills .....	Nov. 22, 1870
107,598	Croft, Edward, assignor to self and Henry Coulter, Philadelphia, Pa. Fruit-jar.	Sept. 20, 1870
	Croft, Samuel, and John C. Schuellermann, executors. (See Liebrich, Conrad.) (Reissue.)	
102,232	Cronin, John, assignor to self and William Merrill, Richmond, Va. Machine for making wooden boxes .....	April 26, 1870
103,430	Cronkite, Nelson, Milford, N. Y. Wheel-barrow .....	May 24, 1870
107,340	Crooker, Matthew A., New York, N. Y. Paddle-wheel .....	Sept. 13, 1870
106,127	Crooker, Walter S., Shamburg, Pa. Medical compound and liniment .....	Aug. 9, 1870
	Crooks, James, and William Y. Warner. (See Warner & Crooks.)	
108,687	Crooks, John P., assignor through mesne assignments to Leonard Morris, Hopkinton, Mass. Machine for skiving leather .....	Oct. 25, 1870
101,232	Croom, William W., Gainesville, Ala. Cotton-seed planter, &c .....	Mar. 29, 1870
105,311	Crosby, Addison, Westfield, N. Y. Guard-finger for harvesters .....	July 12, 1870
	Crosby, Addison, <i>et al.</i> (See Birch, Crosby & Birch.)	
98,745	Crosby, Chauncey O., New Haven, Conn. Papering pins .....	Jan. 11, 1870
100,865	Same..... Paper-box .....	Mar. 15, 1870
101,354	Same..... Machinery for making paper-boxes .....	Mar. 29, 1870
3,911	Same..... Machine for making needles .....	April 12, 1870
101,829	Same..... Machine for arranging needles .....	April 12, 1870
104,278	Same..... Machine for making needles .....	June 14, 1870
105,312	Same..... Machine for polishing needles .....	July 12, 1870
105,313	Same..... Machine for papering needles .....	July 12, 1870
	Same..... Machine for folding paper .....	Dec. 12, 1870
108,976	Crosby, Henry C., Chicago, Ill. Portable elevator and conveyor .....	Nov. 8, 1870
99,539	Crosby, Jay M., and William Ballard, Caroline, N. Y. Railway-car brake .....	Feb. 8, 1870
107,881	Crosby, Mark, Boston, Mass. Parlor-bedstead .....	Oct. 4, 1870
108,457	Same..... Folding-bedstead .....	Oct. 18, 1870
104,709	Crosby, Robert R., Boston, Mass. Lamp-burner .....	June 28, 1870
108,766	Crosby, Theophilus, Mauchester, Iowa. Line and wire tightener .....	Nov. 1, 1870
4,505	Crossman, Charles P., assignor to self, D. Frank Hale, and Sidney Sanders, West Warren, Mass. Scythe .....	Dec. 13, 1870
	Crosman, John C., <i>et al.</i> (See Marland, Obadiah, assignor.)	
100,866	Cross, Daniel H., Bennington, Vt. Photographic-plate dipper .....	Mar. 15, 1870
104,432	Same..... Vial for filtering collodion .....	June 21, 1870
	Cross, William, and William J. Porter. (See Porter & Cross, assignors.)	
103,303	Crossley, Harry A., Cleveland, Ohio. Machine for beveling and crozing barrels.	May 24, 1870
99,411	Crossley, Harry A., assignor to self and Ada D. Crossley, Cleveland, Ohio. Machine for jointing barrel-staves .....	Feb. 1, 1870
106,468	Crossley, Thomas, Bridgeport, Conn. Block for carpet-printing .....	Aug. 16, 1870
	Crossman, Edward J., and James V. Cook. (See Cook & Crossman.)	
	Crossman, Montgomery, and Pratt A. Spicer. (See Spicer & Crossman.)	
102,196	Croswell, Caleb, <i>et al.</i> (See Coon, S. Park, assignor.)	
109,114	Crotzer, H. W., Philadelphia, Pa. Advertising-desk .....	April 19, 1870
104,561	Crouse, Rufus W., Westminster, Md. Horse-power. (Antedated Oct. 29, 1870).	Nov. 8, 1870
	Crowe, John, Canada. Thread-cutter for sewing-machines .....	June 21, 1870
	Crowell, A. B., and William Bayley. (See Bayley & Crowell.)	
103,304	Crowell, H. C., Morgan, Ohio. Rotary injector for steam-boilers .....	May 24, 1870
108,112	Crowell, Sommers, Philadelphia, Pa. Iron fence .....	Oct. 11, 1870
103,147	Crowley, John, Sparta, Wis. Beater for thrashing-machines .....	May 17, 1870
104,433	Crowson, Valenus W., assignor to self and Stephen Massey, Westfield, Mass. Method of covering whips .....	June 21, 1870
107,882	Crozier, Archibald H., Oswego, N. Y., and Martin Taylor, Hartford, Conn. Roulette .....	Oct. 4, 1870
107,883	Crumb, Wells, Coloma, Mich. Portable fence .....	Oct. 4, 1870
99,645	Crumbie, Alexander, Jersey City, N. J. Oven .....	Feb. 8, 1870
103,034	Crume, Jonathan W., Troy, Mo. Corn-planter .....	Aug. 2, 1870
100,733	Crummy, John C., and Albert A. Parsons, Pittsburgh, Pa. Folding-chair. (Antedated Feb. 25, 1870).	Mar. 15, 1870
	Crump, John W., <i>et al.</i> (See Wagner, Franz, assignor.)	
101,830	Crump, Samuel, New York, N. Y. Bronze-collecting attachment to bronzing-machines .....	April 12, 1870
106,667	Same..... Brooklyn, N. Y. Bronzing-machine .....	Aug. 23, 1870
98,746	Crutchfield, J. F., and C. T. Whitten, Longmire's Store, S. C. Machine for tenoning spokes .....	Jan. 11, 1870
	Cruthers, James. (See Price, Thomas, assignor.)	
102,778	Cruttenden, Alvah E., Canaseraga, N. Y. Poke .....	May 10, 1870
103,578	Cubley, Edwin J., Chicago, Ill. Embroidering-attachment for sewing-machines.	May 31, 1870
105,431	Cuddy, James, Pittsburgh, Pa. Manufacture of white lead .....	July 19, 1870
104,434	Cuddy, James, Pittsburgh, and George Selden, Philadelphia, Pa. Manufacture of white lead .....	June 21, 1870
	Culbertson, C. A. (See Tinnell, Francis M., assignor.)	
98,567	Culliss, William, Philadelphia, Pa. Joint mold or flask .....	Jan. 4, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Culp, George W. D., and John Dickason. ( <i>See Dickason &amp; Culp.</i> )	
4,365	Culver, Henry H., Kansas City, Mo. Cook-stove.....	Sept. 27, 1870
93,568	Culver, Jacob D., Bellmore, Ind. Sawing-machine.....	Jan. 4, 1870
99,855	Culver, J. E., Hudson, N. J. Steam-engine.....	Feb. 15, 1870
	Culver, John P., and G. H. Titcomb. ( <i>See Titcomb &amp; Culver.</i> )	
	Culver, Willard B., <i>et al.</i> ( <i>See Weston, Broadbent &amp; Culver.</i> )	
99,055	Culver, Williams, Vineland, N. J. Punching and shearing machine.....	Jan. 25, 1870
104,935	Cumings, David M., Newburyport, Mass. Bung.....	July 5, 1870
106,668	Cumming, David, jr., Brooklyn, N. Y. Nut-lock.....	Aug. 23, 1870
	Cummings, Emory. ( <i>See Miller, Charles H., assignor.</i> )	
99,167	Cummings, George B., Cambridge, Mass. Sheet-gauge for printing-presses.....	Jan. 25, 1870
104,936	Cummings, James G., Columbus, Miss. Cotton and hay press.....	July 5, 1870
	Cummings, Nathaniel. ( <i>See Bourne, William, assignor.</i> )	
	Same.....( <i>See Oliver, Charles F., assignor</i> ).....(Two cases.)	
108,977	Cummings, Perley D., Portland, Me. Device for keying paving-blocks.....	Nov. 8, 1870
109,591	Same.....Machine for making key-boards for wood-pavements.....	Nov. 29, 1870
110,440	Same.....Machine for grooving blocks for wood-pavements.....	Dec. 27, 1870
110,119	Cummings, Perley M., assignor to self and Joseph D. Clark, Cincinnati, Ohio. Head-block.....	Dec. 13, 1870
110,441	Cummings, Samuel M., and Henry Israel, assignors of one-third interest to Ransom C. Wright, Allegheny, Pa. Self-cleaning locomotive smoke-stack.....	Dec. 27, 1870
104,937	Cummings, Thomas, Lancaster, Pa. Composition for photographic purposes.....	July 5, 1870
	Cummings, W. ( <i>See Alloways, John, assignor.</i> )	
4,483	Cummins, Erastus S., Clarence, Iowa. Well-casing.....(Design).....	Nov. 22, 1870
102,505	Cummins, William G., Civil District No. 10, Tenn. Tailors' scale.....	May 3, 1870
108,688	Cumnock, John, Salmon Falls, N. H. Self-acting mule for spinning.....	Oct. 25, 1870
103,992	Cundiff, Richard Jackson, Lynchburg, Va. Combined abdominal and back supporter and truss.....	June 7, 1870
98,569	Cunningham, Arthur, Cincinnati, Ohio. Plowing and harrowing machine.....	Jan. 4, 1870
107,009	Cunningham, David H., Waltham, Mass. Button-hole cutter.....	Sept. 6, 1870
109,115	Cunningham, James, Rochester, N. Y. Apparatus for fitting and setting axles.....	Nov. 8, 1870
110,442	Cunningham, Matthew G., Corsicana, Texas. Press for hay, cotton, &c.....	Dec. 27, 1870
	Cunningham, William, <i>et al.</i> ( <i>See Many, McGinnis &amp; Cunningham.</i> )	
107,884	Cuppers, Gustavus, New York, N. Y. Street-lamp. (Antedated Sept. 21, 1870) ..	Oct. 4, 1870
108,886	Curell, James H., assignor to self and Jeremiah E. Morrissey, St. Louis, Mo. Sawing-machine.....	Nov. 1, 1870
103,148	Curkendall, George, Dixon, Ill. Plow-colter.....	May 17, 1870
103,579	Curley, Thomas, Wilmington, Del. Setting gas-retorts.....	May 31, 1870
105,432	Curnan, John J., Lyons, Iowa. Tenoning-machine.....	July 19, 1870
99,646	Curran, James, Baltimore, Md. Fire-plug.....	Feb. 8, 1870
100,867	Curran, William, St. Louis, Mo. Depurator.....	Mar. 15, 1870
99,856	Currey, Thomas H., Cincinnati, Ohio. Paint.....	Feb. 15, 1870
104,279	Currie, Daniel, assignor to self, Hiram K. Hazlett, and Samuel L. Fisher, St. Louis, Mo. Lubricator.....	June 14, 1870
	Currie, John, and John Martino. ( <i>See Martino &amp; Currie.</i> ).....(Design.)	
100,506	Currier, Arthur W., Grand Rapids, Mich. Paper-cutting machine.....	Mar. 8, 1870
108,332	Currier, Daniel G., Waltham, Mass. Construction of watches.....	Oct. 18, 1870
105,179	Currier, John, and Abel Pevey, Lowell, Mass. Cylinder-stove.....	July 12, 1870
	Currier, John J. ( <i>See Mayo, Israel C., assignor.</i> )	
109,808	Currier, John P., New York, N. Y. Railway reclining-chair.....	Dec. 6, 1870
101,233	Curry, Hugh E., Louisville, Ky. Steam-generator.....	Mar. 29, 1870
103,431	Curry, John Mayrs, assignor to self, John McLaughlin, and Dennis Phalen, South Framingham, Mass. Steam-engine.....	May 24, 1870
106,786	Curry, John P., New York, N. Y. Railroad-car duster and ventilator.....	Aug. 30, 1870
105,047	Curryer, Joseph C. and William F., Thorntown, Ind. Tender for plows and cultivators. (Antedated June 30, 1870) ..	July 5, 1870
	Currier, Joseph C., and William Gauze. ( <i>See Gauze &amp; Currier.</i> )	
105,652	Curtin, William H., and William Lammers, Breese, Ill. Churn.....	July 26, 1870
	Curtis, Charles M., and Baxter Lyon. ( <i>See Lyon &amp; Curtis.</i> )	
105,433	Curtis, Charles R. S., Quincy, Ill. Needle for sewing-machines.....	July 19, 1870
100,607	Curtis, Dexter, Madison, Wis. Press. (Antedated February 2, 1870) ..	Mar. 8, 1870
105,917	Curtis, Dexter, Chicago, Ill. Horse-collar cap.....	Aug. 2, 1870
106,669	Curtis, Francis, Newburyport, Mass. Slide-valve for steam-engines.....	Aug. 23, 1870
108,007	Curtis, Francis, Brattleborough, Vt. Vegetable-cutter.....	Oct. 4, 1870
99,412	Curtis, Frederick, Boston, Mass. Water-proof stocking.....	Feb. 1, 1870
109,592	Curtis, George, assignor to self and E. Bigelow, Springfield, Mass. Filter.....	Nov. 29, 1870
109,593	Same.....same.....	Nov. 29, 1870
103,722	Curtis, Henry A., Richmond, Va. Railroad-car ventilator.....	May 31, 1870
104,710	Curtis, James P., Wytheville, Va. Churning-apparatus.....	June 28, 1870
108,887	Curtis, John F., Chicago, Ill. Card-rack.....	Nov. 1, 1870
	Curtis, John F., <i>et al.</i> ( <i>See Wardrobe, Fisk, Curtis &amp; Fetley.</i> )	
101,234	Curtis, John G., Emporium, Pa. Rolling-machine for leather.....	Mar. 29, 1870
101,984	Same.....Bark-mill.....	April 19, 1870
109,393	Same.....Operating hide-mills.....	Nov. 22, 1870
106,670	Curtis, J. W., Bath, N. Y. Portable gate-fence.....	Aug. 23, 1870
4,150	Curtis, John W., Franklin A. Briggs, and Milton O. Cox, Coldwater, Mich. Carriage-step.....	June 14, 1870
99,066	Curtis, N. W., Johnsbury, N. Y. Horse hay-rake.....	Jan. 25, 1870
104,120	Curtis, Thomas, Holly, Mich. Butter-extractor.....	June 14, 1870
103,993	Curtis, William B., Bridgeport, Conn. Wick-adjuster for argand lamp-burners.....	June 7, 1870
109,184	Cushing, Alvin Matthew, Lynn, Mass. Sheave.....	Nov. 15, 1870
	Cushing, George S., <i>et al.</i> ( <i>See Dows, Gustavus D., assignor.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Cushing, George S., <i>et al.</i> (See Hallowell, Albert, assignor) ..... (Reissue.) Same.....same.	
99,762	Cushing, George W., assignor to self and Horatio Anderson, Chicago, Ill. Safety-valve.....	Feb. 15, 1870
109,809	Cushing, Milo A., and Otis R. Glover, Ottawa, Ill. Nut-lock. (Antedated November 26, 1870).....	Dec. 6, 1870
100,868	Cushing, Royal J., Bowdoinham, Me. Vise.....	Mar. 15, 1870
	Cushing, Samuel B., assignor of one-half interest to Samuel Ashburner, Providence, R. I. Piles..... (Disclaimer filed December 29, 1870.)	
	Cushing, W. L. (See Bradley, Alfred, assignor.)	
106,333	Cushings, John, Willington, Ohio. Compound for cure of coughs, &c.....	Aug. 16, 1870
106,919	Cushman, Austin F., Hartford, Conn. Hollow-auger.....	Aug. 30, 1870
101,403	Cushman, Charles H., Alexandria, Va. Hose-coupling.....	Mar. 29, 1870
104,837	Same.....same.....	June 28, 1870
106,787	Cushman, Dwight, Hartford, Conn. Water-wheel.....	Aug. 30, 1870
99,168	Cushman, G. W., Aiken, S. C. Cheese-cutter.....	Jan. 25, 1870
103,149	Cushman, Henry T., North Bennington, Vt. Eraser.....	May 17, 1870
103,150	Cushman, Sylvanus D., assignor to Automatic Fire-Alarm Company, New Lisbon, Ohio. Signal-box for fire-alarm telegraphs.....	May 17, 1870
105,552	Same.....System of fire-alarm and police telegraphs.....	July 19, 1870
107,460	Same.....Signal-box for fire-alarm telegraphs.....	Sept. 20, 1870
107,668	Custer, Cornelius, Norristown, Pa. Carriage-gearing. (Antedated September 17, 1870).....	Sept. 27, 1870
101,831	Custer, George, Monroe, Mich. Toe-calk for horseshoes.....	April 12, 1870
	Custer, Zora B., and Ralph Rockwell. (See Rockwell & Custer.)	
102,233	Cuthbert, John, Pittsburgh, Pa. Furnace, grate-bar, and grating.....	April 26, 1870
104,711	Cutler, George P., Lawrence, Mass. Moustache-shield for cups.....	June 28, 1870
	Cutler, John W. (See Mewes, Henry, assignor.)..... (Two cases.)	
104,938	Cutler, Lewis, Springfield, Mass. Spring bed-bottom.....	July 5, 1870
103,151	Cutter, Amos, Boston, Mass. Stave-jointing machine.....	May 17, 1870
104,121	Same.....Machine for finishing staves.....	June 14, 1870
103,113	Same.....Machine for setting up barrels.....	Oct. 11, 1870
103,114	Same.....Machine for cutting locks in hoops.....	Oct. 11, 1870
103,115	Same.....Machine for making barrel-heads.....	Oct. 11, 1870
	Cutter, Ebenezer P. (See White, Morris W., assignor.)	
106,128	Cutter, John D., New York, N. Y. Spool-thread case.....	Aug. 9, 1870
107,763	Cutting, Lewis, San Francisco, Cal. Clothes-drier.....	Sept. 27, 1870
102,779	Daboll, Charles M., New London, Conn. Friction-roller bearing.....	May 10, 1870
	Daffin, Thomas, <i>et al.</i> (See Gerhardt, William, assignor.)	
	Dages, John. (See Beales, Emanuel D., assignor.)	
110,552	Daggett, Frederick K., Boston, Mass. Trunk.....	Dec. 27, 1870
99,857	Daggett, John S., Hope, Me. Device for attaching spittoons to floors of railroad-cars.....	Feb. 15, 1870
	Daggett, Lorenzo V., and William La Banister. (See La Banister & Daggett.)	
108,008	Daggett, William A., Landis Township, N. J. Clothes-drier.....	Oct. 4, 1870
109,497	Daggett, William A., South Vineland, N. J. Bread-pan.....	Nov. 29, 1870
	Daggett, William A., and Allen Hemingway. (See Hemingway & Daggett.)	
109,875	Daggett, William H., South Vineland, N. J. Bread-pan.....	Dec. 6, 1870
100,869	Dahl, M. K., Waupun, Wis. Plow.....	Mar. 15, 1870
3,913	Dahlinger, Charles, Allegheny, Pa. Burial-casket..... (Design).....	Mar. 22, 1870
107,228	Dailey, Albert A., Wilson, N. Y. Plow.....	Sept. 13, 1870
103,994	Dailey, John, St. Louis, Mo. Apparatus for the manufacture of illuminating gas.....	June 7, 1870
103,023	Dalbey, George W., Carrollton, Miss. One-armed man's assistant.....	May 17, 1870
	Dale, Abraham, and H. D. McMaster. (See McMaster & Dale.)	
	Dale, J. D. and J. H., <i>et al.</i> (See Holmes, Horace H., assignor.)	
98,472	Dale, Nicholas N., Plymouth, Ind. Switch-stand for railways.....	Jan. 4, 1870
105,314	Dale, Thomas, Russellville, Ky. Corn-planter.....	July 12, 1870
107,010	Dale, Thomas N., jr., and George Kraink, Paterson, N. J. Machine for covering cord.....	Sept. 6, 1870
109,185	Same.....Machine for spinning and doubling silk, &c.....	Nov. 15, 1870
	Daley, James. (See Sweetland, Anthony B., assignor.)	
106,920	Dallon, Joseph E., Brooklyn, N. Y. Fastening for garments.....	Aug. 30, 1870
	Dalrymple, Peter, and William Pickens. (See Pickens & Dalrymple.)	
98,473	Dalzell, David, South Egremont, Mass. Carriage-axle.....	Jan. 4, 1870
106,469	Same.....Axle-box.....	Aug. 16, 1870
106,470	Same.....Axle for vehicles.....	Aug. 16, 1870
102,653	Damerel, William, Brooklyn, N. Y. Sash-balance.....	May 3, 1870
101,955	Dames, William W., San José, Cal. Camera-stand.....	April 19, 1870
	Damon, Charles Edwin, and Edwin Lee Yancy. (See Yancy & Damon.)	
102,780	Damon, George L., Portland, Me. Bolt for safes, &c.....	May 10, 1870
102,920	Dana, Charles Henry, West Lebanon, N. H. Machine for the manufacture of trays.....	May 10, 1870
4,399	Dandre, Leonce F., France. Oil-cloth pattern..... (Design).....	Oct. 11, 1870
	Daney, John C., <i>et al.</i> (See Hanchett, Daney & Stuart.)	
99,858	Danforth, D. A., Elkhart, Ind. Drive well-tube.....	Feb. 15, 1870
105,918	Danforth, George L., Lebanon, N. H. Shutter-worker.....	Aug. 2, 1870
110,209	Daniel, Charles, Brownsville, Mo. Vehicle.....	Dec. 20, 1870
98,672	Daniels, D. G., Chicago, Ill. Railway-car spring.....	Jan. 11, 1870
105,315	Daniels, Francis L., Boston, Mass. Dust-pan.....	July 12, 1870
4,131	Daniels, Henry A., assignor to the Daniels, Nichols & Gaylord Manufacturing Company, Waterbury, Conn. Lubricator..... (Reissue).....	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,647	Daniels, Horace, <i>et al.</i> (See Clarner, John E., assignor.)	
103,152	Daniels, John F., Lake Village, N. H. Knitting-machine needle.....	Feb. 8, 1870
108,978	Daniels, Levi, Oak Hill, N. Y. Bolt-cutting device.....	May 17, 1870
	Daniels, Lewis S., Foxboro, Mass. Steam-radiator.....	Nov. 8, 1870
	Daniels, Thomas L., and John O'Farrell. (See Crawford, A. B., assignor.) (Re-issue.)	
99,763	Daniels, W. H., Bryan, Ohio. Fruit-jar.....	Feb. 15, 1870
110,015	Daniels, William, T. H., Bellville, Ohio. Feed-regulator.....	Dec. 13, 1870
109,186	Danks, Samuel, assignor to self, Joseph C. Butler, and Lewis Worthington, Cincinnati, Ohio. Machine for squeezing puddlers' balls.....	Nov. 15, 1870
107,669	Dann, Christian, La Crosse, Wis. Jointed car.....	Sept. 27, 1870
107,461	Dann, Frank A., and James McKibbin, Wellsville, Mo. Combined harrow and roller.....	Sept. 20, 1870
109,876	Dann, Isaac N., assignor to the New Haven Folding-Chair Company, New Haven, Conn. Folding-chair, &c.....	Dec. 6, 1870
103,024	Dann, Jesse W., Columbus, Ohio. Seat-frame for vehicles.....	May 17, 1870
107,341	Darby, George W., and Amos S. Moon., Blanchester, Ohio. Water-regulator.....	Sept. 13, 1870
93,851	D'Arcus, C. H., Detroit, Mich. Adjustable reclining-chair.....	Jan. 18, 1870
103,888	Dare, Samuel G., New York, N. Y. Gas-heater.....	Nov. 1, 1870
107,165	Darley, William, England. Side-light for vessels.....	Sept. 6, 1870
105,653	D'Arlinecourt, L. Guyot, France. Relay-magnet.....	July 26, 1870
107,229	Darling, Cook, Utica, N. Y. Potato-digger.....	Sept. 13, 1870
100,870	Darling, Samuel, Providence, R. I. Railroad-car ventilator.....	Mar. 15, 1870
106,558	Same..... Ventilating-window for railroad-cars.....	Aug. 23, 1870
4,197	Same..... Inkstand..... (Reissue).....	Dec. 13, 1870
105,180	Darling, Samuel, assignor to Darling, Brown, & Sharpe, Providence, R. I. Process and apparatus for hardening files, &c.....	July 12, 1870
99,859	Darlington, Robert, and Elvy L. Watson, Auburn, N. J. Machine for digging sweet-potatoes.....	Feb. 15, 1870
109,720	Darnall, James E., Washington, D. C. Fly-brush.....	Nov. 29, 1870
102,659	Darnell, John T., Florence, N. J. Staple-machine.....	May 3, 1870
98,474	Darozir, Levi, assignor to self and Napoleon Nallette, Worcester, Mass. Ice-sled.....	Jan. 4, 1870
106,035	Darrach, Samuel, A., Newburgh, N. Y. Fence-post.....	Aug. 2, 1870
110,210	Darrow, Franklin E., assignor to Darrow Manufacturing Company, Bristol, Conn. Powder-flask. (Antedated Dec. 17, 1870).....	Dec. 20, 1870
	Dart, Jonathan, <i>et al.</i> (See Harrington, Jackson, assignor.)	
101,438	Dashiell, John M., Decatur, Ill. Flour and meal chest.....	April 5, 1870
100,124	Dater, J. H., Eagle Mills, N. Y. Combined mowing-machine and hay-tedder.....	Feb. 22, 1870
105,181	Datichy, Jean Pierre Florimond, Brooklyn, N. Y. Injector for steam-boilers.....	July 12, 1870
103,995	Dautherty, George W., Wilmington, Del. Spooling-machine.....	June 7, 1870
103,996	Same..... Spindle for spinning-machines.....	June 7, 1870
	Davenport, D. D., <i>et al.</i> (See Patterson, N. A., assignor.)	
	Davenport, Joseph D., and James T. Bliss. (See Bliss & Davenport.)	
105,919	David, John B., New York, N. Y. Tool-handle.....	Aug. 2, 1870
108,767	Davidson, John, Albany, N. Y. Lock for sliding-doors.....	Nov. 1, 1870
103,723	Davie, Charles H., and William Jackson, Chicago, Ill. Organ.....	May 31, 1870
98,673	Davies, Henry, Covington, Ky. Mold for casting metal.....	Jan. 11, 1870
103,305	Davies, Henry, Newport, Ky. Machine for cleaning cast pipes.....	May 24, 1870
104,939	Same..... Manufacture of iron by the Ellershausen process.....	July 5, 1870
98,475	Davies, Joshua, Muskegon, Mich. Spoke-shave.....	Jan. 4, 1870
109,877	Davies, Samuel M., Chicago, Ill. Locomotive head-light. (Antedated Nov. 23, 1870).....	Dec. 6, 1870
101,106	Davis, Anthony G., and Charles W. Blakeslee, Watertown, and Alpheus N. Allen, Westville, Conn., assignors to Chapin Knitting-Machine Company. Knitting-machine.....	Mar. 22, 1870
105,048	Davis, Anthony G., and H. S. Frost, assignor to Davis and Woolson, Watertown, Conn. Mouse-trap.....	July 5, 1870
110,211	Davis, Anthony G., <i>et al.</i> (See Frost, Henry S., assignor.)	
	Davis, Asahel, Lowell, Mass. Transplanting-implement. (Antedated Dec. 14, 1870).....	Dec. 20, 1870
106,129	Davis, Augustus Ball, Philadelphia, Pa. Duplex-wrench.....	Aug. 9, 1870
103,153	Davis, Augustus C. L., St. Louis, Mo. Hand corn-planter.....	May 17, 1870
101,591	Davis, A. M., Washington, D. C. Garment-dummies.....	April 5, 1870
101,107	Davis, Biram C., Binghamton, N. Y. Machine for wiring window-blinds.....	Mar. 22, 1870
103,848	Same..... Machine for trimming blind-rods.....	June 7, 1870
107,166	Same..... Envelope. (Antedated Aug. 27, 1870).....	Sept. 6, 1870
99,648	Davis, Biram C., assignor of two-thirds interest to William M. De Long and William F. Mills, Binghamton, N. Y. Mop and rubber-scrubber.....	Feb. 8, 1870
	Davis, Charles F., <i>et al.</i> (See Stearns, Caleb S., assignor.) (Reissue.)	
107,011	Davis, Cornelius E., St. Helena, Cal. Maxillary compress.....	Sept. 6, 1870
107,012	Davis, Enos, Noblesville, Ind. Bee-hive.....	Sept. 6, 1870
100,379	Davis, Evan, Almond, N. Y. Grain-elevator.....	Mar. 15, 1870
108,689	Davis, Ezra, Keokuk, Iowa. Washing-machine.....	Oct. 25, 1870
106,130	Davis, George, and John R. Hoover, Elizabeth Port, N. J. Drawing-frame for hemp, &c.....	Aug. 9, 1870
3,856	Davis, George H., Boston, Mass. Piano-case..... (Design).....	Feb. 22, 1870
100,266	Same..... Grand piano.....	Mar. 1, 1870
102,094	Davis, Hilar D., North Andover, Mass. Pattern-chair for looms.....	Apr. 19, 1870
106,334	Same..... Loom.....	Aug. 16, 1870
106,335	Same..... Loom.....	Aug. 16, 1870
107,462	Davis, Hiram B. S., Farmington, Me. Carriage-brake.....	Sept. 20, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,434	Davis, Horace L., assignor to self and Gustavus W. Ingalls, Worcester, Mass. Roofing composition	July 19, 1870
105,182	Davis, Isaac A., Philadelphia, Pa. Apparatus for sponging cloth	July 12, 1870
106,131	Davis, James, New Orleans, La. Railway-switch	Aug. 9, 1870
4,068	Davis, James, assignor of part interest to Ford W. Davis, Philadelphia, Pa. Saw (Reissue)	July 12, 1870
101,439	Davis, James, jr., and David Scott, jr., Greenborough, N. C. Cotton-harvester. Davis, James A., <i>et al.</i> (See Guseman, Davis & McGeorge.)	Apr. 5, 1870
109,721	Davis, James B. and Seth M., Harrisonville, Mo. Oscillating-piston engine	Nov. 29, 1870
105,782	Davis, James H. and Zephaniah A. F. Lefebere. (See Lefebere & Davis.) Davis, James N., assignor to self and J. C. Grannon, Cincinnati, Ohio. Water-closet	July 26, 1870
103,154	Davis, Jarvis, assignor to P. Smith, Buffalo, N. Y. Breech-loading fire-arm	May 17, 1870
99,067	Davis, Job A., Watertown, N. Y. Sewing-machine	Jan. 25, 1870
106,783	Same.....Gathering device for sewing-machines	Aug. 30, 1870
106,789	Same.....Creasing attachment for sewing-machines	Aug. 30, 1870
104,712	Davis, John, Terre Haute, Ind. Knob-latch	June 28, 1870
104,713	Davis, John Boon, Cleveland, Ohio. Metallic roofing	June 28, 1870
107,013	Davis, John R., and Frederick Rominger, Bloomfield, Iowa. Wardrobe, bedstead, and bureau	Sept. 6, 1870
98,747	Davis, Jonathan Dunlap, Fitchburgh, Mass. Pipe-tongs	Jan. 11, 1870
103,155	Davis, Joseph, Harrisburgh, Pa. Clothes-line holder	May 17, 1870
105,316	Davis, J. Addison, Verona, Miss. Corn-planter	July 12, 1870
3,823	Davis, Joseph H., Allegheny, Pa. Stop-valve (Reissue)	Feb. 8, 1870
99,649	Same.....Bib-cock	Feb. 8, 1870
99,650	Same.....Angle valve-cock	Feb. 8, 1870
99,651	Same.....Globe valve-cock	Feb. 8, 1870
99,652	Same.....Check valve-cock	Feb. 8, 1870
99,653	Same.....Valve-cock made of cast iron, and subsequently annealed	Feb. 8, 1870
110,016	Davis, Joseph H., Chillicothe, Mo. Arm-attachment for clocks	Dec. 13, 1870
110,443	Davis, Joseph K., Monticello, S. C. Hay and cotton press	Dec. 27, 1870
105,654	Davis, Joseph Watts, Dublin, Ohio. Adjustable reel-post for harvesters. Davis, Lawrence & Co. (See Fulgum, Jesse P., assignor.) Davis, Luko K., <i>et al.</i> (See Fifield, Levi W., assignor.)	July 26, 1870
104,280	Davis, Nathan C., assignor to I. N. Hobill, Worthington, Ohio. Corn-planter	June 14, 1870
110,017	Davis, Noah, Boston, Mass. Coffee-roaster	Dec. 13, 1870
99,540	Davis, Oliver A., Brooklyn, N. Y. Floating velocipede	Feb. 8, 1870
107,220	Davis, Owen, New Lebanon, Ind. Knitting-machine	Sept. 13, 1870
106,132	Davis, Perry W., Portland, Oregon. Automatically-operated water-closet seat. (Antedated August 4, 1870.)	Aug. 9, 1870
102,781	Davis, R. T., Canton, Ohio. Chill for casting toothed gear	May 3, 1870
98,852	Davis, S. H. and D. W., Detroit, Mich. Ice-crushing table	Jan. 18, 1870
110,212	Davis, Thomas, Detroit, Mich. Motive-power apparatus	Dec. 20, 1870
101,715	Davis, Thomas H., St. Joseph, Mo. Sash-holder. (Antedated April 6, 1870.)	Apr. 12, 1870
102,660	Davis, Thomas Hale, assignor to Cheney Kilburn and Joel Hale Gates, Philadelphia, Pa. Composition for and mode of ornamenting wood	May 3, 1870
100,016	Davis, Thomas M., and William High Kern. (See Kern & Davis.)	
100,125	Davis, Thomas S., Lancaster, Pa. Grate-bar	Feb. 22, 1870
109,878	Davis, William, and Joseph While, Cleveland, Ohio. Machine for rolling car-coupling pins	Feb. 22, 1870
3,951	Davis, William A., Salem, Ohio. Rotary engine	Dec. 6, 1870
108,240	Davis, William C., Cincinnati, Ohio. Cooking-stove (Design)	Apr. 5, 1870
109,187	Same.....(See Van Deursen, William P., assignor.)	
4,469	Same.....Cook-stove	Oct. 11, 1870
103,306	Same.....Oven-plate for cooking-stoves	Nov. 15, 1870
	Same.....Stove-shelf (Design)	Nov. 15, 1870
	Davis, William C. and John W. Garrison, Philadelphia, Pa. Cooking-stove	May 24, 1870
	Davis, William C., and William P. Van Deursen. (See Stewart & Bradley, assignors) (Reissue.)	
	Same.....(See Van Deursen & Davis.)	
106,671	Davis, William H., assignor to self and Joseph Harlan, Lexington, Ind. Machine for cutting hoops	Aug. 23, 1870
108,458	Davis, William M., assignor to self and Sidney S. Norton, Brook Haven, N. Y. Machine for ornamenting and lettering looking-glasses, signs, &c.	Oct. 18, 1870
99,860	Davison, Darius, New York, N. Y. Apparatus for generating illuminating gas	Feb. 15, 1870
108,009	Same.....Gas retort	Oct. 4, 1870
108,889	Davison, Henry J. (See Dufilus, George H. S., assignor.) Davison, J. Ham, and Thomas J. Sasher, Mound Station, Ill. Hay-press	Nov. 1, 1870
	Davison, John S., and Nicholas Lorton. (See Lorton & Davison.)	
109,498	Dawley, Benjamin G., North Providence, R. I. Loom (Extension)	Dec. 22, 1870
108,690	Dawson, Charles W., Painesville, Mo. Combined pruning-implement	Nov. 22, 1870
185,783	Dawson, James, Greenwood, Ill. Harrow	Oct. 25, 1870
108,979	Dawson, Joseph, Alexandria, Va. Alcohol and spirit still	July 26, 1870
104,122	Day, Andrew, Crystal Springs, Miss. Plow	Nov. 8, 1870
104,562	Day, Augustus, Detroit, Mich. Paper-file. (Antedated May 27, 1870)	June 14, 1870
110,213	Day, Austin G., Seymour, Conn. Asphaltum or concrete pavement	June 21, 1870
101,108	Day, Benjamin, West Hoboken, N. J. Sectional image	Dec. 20, 1870
	Day, Charles T., Newark, N. J. Skate	Mar. 22, 1870
	Day, E. P. (See Winslow, Charles P., assignor.)	
	Day, Frederick K., <i>et al.</i> (See Campbell, Alexander McDonald, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Day, Henry C., <i>et al.</i> (See Hulbert, Steel & Day ..... (Design.)	
102,095	Day, John, Buffalo, N. Y. Horseshoe blank .....	Apr. 19, 1870
102,506	Day, John, Paterson, N. J. Let-off mechanism for looms.....	May 3, 1870
100,380	Day, J. C., Hackettstown, N. J. Seasoning and preserving wood.....	Mar. 1, 1870
98,748	Day, S. Allan, Bowling Green, Ohio. Cartridge-box .....	Jan. 11, 1870
102,375	Same..... Cartridge-case .....	Apr. 26, 1870
	Day, Theodore D. (See Smith, Charles H., assignor.)	
107,342	Day, Willard G., Baltimore, Md. Transposing mechanism for organs.....	Sept. 13, 1870
110,120	Same..... Piano-forte action .....	Dec. 13, 1870
3,824	Dayton, Edwin, Meriden, Conn. Cement water-pipe .....	Feb. 8, 1870
98,853	Dayton Henry G., Dayton, Ohio. Still for whisky and other spirits .....	Jan. 18, 1870
103,849	Dayton, John W., assignor to American Suspender Company, Waterbury, Conn. Rosette .....	June 7, 1870
101,833	Deacon, Benjamin Richard, Canada. Coal-box.....	Apr. 12, 1870
3,837	Deacon, Joseph H., Lumberton, N. J. Alcoholic liquor from the rhubarb plant. (Reissue) .....	Feb. 15, 1870
109,722	Deacon, Samuel, and John Russell, Lawrence, Mass. Packing-box for rotary steam-cylinders.....	Nov. 29, 1870
98,570	Deau, Charles L., assignor to self and Francis B. Ray, Franklin, Mass. Guard for machine for picking waste .....	Jan. 4, 1870
100,734	Dean, Charles L., Newark, N. J. Combined latch and lock.....	Mar. 15, 1870
101,592	Dean, Cyrus, Buffalo, N. Y. Washing-machine .....	Apr. 5, 1870
106,672	Dean, Edmund W., Norwich, Conn. Stop-motion for braiding-machines .....	Aug. 23, 1870
104,563	Dean, Edward L., Newburgh, Ohio. Street and station indicator for railroad-cars .....	June 21, 1870
102,507	Dean, Ephraim-K., assignor to William C. Lovering, Bangor, Me. Cover for kettles and other vessels .....	May 3, 1870
	Dean, John. (See Patterson, Andrew, assignor.)	
106,133	Dean, Lorenzo, Fort Edward, N. Y. Apparatus for reducing fibrous material to a textile stock .....	Aug. 9, 1870
106,134	Same..... Attachment to paper-machines to prevent the straining and breaking of the paper during manufacture .....	Aug. 9, 1870
109,595	Same..... Boiler for preparing paper-pulp.....	Nov. 29, 1870
109,596	Same..... Preparation of straw for the manufacture of paper.....	Nov. 29, 1870
102,921	Dean, Marcus E., Foxborough, Mass. Sawing-machine.....	May 10, 1870
	Dean, Mary E. (See Clarke, William E., assignor.)	
109,594	Dean, Otis, Richmond, Va. Combined vise and drill.....	Nov. 29, 1870
104,714	Dean, Portius Festus, Watsonville, Cal. Seat for vehicles.....	June 28, 1870
	Deau, R. L., <i>et al.</i> (See Clark, George, assignor.)	
102,234	Deane, Charles P., Springfield, Mass. Direct-acting engine .....	Apr. 26, 1870
108,691	Deane, Royal E., New York, N. Y. Cooking-range.....	Oct. 25, 1870
101,235	Dearborn, Gilbert K., assignor to Timothy Earle, Pawtucket, R. I. Knife-guard .....	Mar. 29, 1870
105,655	Same..... Egg-beater .....	July 26, 1870
	Same..... (See Earle and Dearborn, assignors.)	
110,214	Dearborn, John C., Candia, N. H. Car-coupling .....	Dec. 20, 1870
108,890	Deatriek, William H., Heildersburgh, Pa. Boring-machine.....	Nov. 1, 1870
105,435	Deavs, Charles, assignor to the Archer and Pancoast Manufacturing Company, New York, N. Y. Drop-light gasolier .....	July 19, 1870
107,885	De Bare, Reuben B., Philadelphia, Pa. Barrel-head.....	Oct. 4, 1870
	De Barry, James J., and William Sanderson. (See Sanderson and De Barry.) (Two cases.)	
	De Beaumont, Edward. (See Cloes, John Joseph, assignor.)	
107,463	Debzell, Martin, Wabash, Indiana. Extension-table and settee.....	Sept. 20, 1870
103,025	Decelle, Maxime, Newburgh, Ohio. Spike, bolt, and rivet machine .....	May 17, 1870
105,656	Dechant, William H., assignor to David Brooks, Philadelphia, Pa. Cramp-hook for telegraphic-wire insulators .....	July 26, 1870
105,049	Decker, David, New York, N. Y. Former for bending and gluing the cases of grand pianos .....	July 5, 1870
105,920	Decker, Frederick, Delaware, Ohio. Seed-harvester .....	Aug. 2, 1870
102,782	De Dartin, Charles Felix, and Jules Edouard, France. Revolving fire-arm .....	May 10, 1870
103,026	Dederick, Levi, New York, N. Y. Sleeping-collar.....	May 17, 1870
107,464	Same..... Churn .....	Sept. 20, 1870
4,193	Same..... Sleeping-collar .....	Dec. 6, 1870
99,295	Dederick, Peter K., Greenbush, N. Y. Baling-press. (Autodated Aug. 1, 1870) .....	Feb. 1, 1870
99,296	Same..... same .....	Feb. 1, 1870
99,297	Same..... same .....	Feb. 1, 1870
102,376	Dederick, Peter, Albany, N. Y. Coal-barrow .....	Apr. 26, 1870
109,188	Same..... Dumping-car .....	Nov. 15, 1870
105,317	Dee, Lon Hen, Grand Junction, Iowa. Ash-pan for locomotives .....	July 12, 1870
98,931	Deeble, John, Plantsville, Conn. Method of forming T-bolts .....	Jan. 18, 1870
99,413	Same..... Spring-bolt and clip .....	Feb. 1, 1870
101,834	Same..... Perch-spring clip .....	Apr. 12, 1870
105,553	Deeds, William S., assignor to self, John H. Baer, and George Koch, Baltimore, Md. Kettle for melting, mixing, and casting metals .....	July 19, 1870
100,267	Deey, Edward Mortimer, New York, N. Y. Ventilator.....	Mar. 1, 1870
100,988	Same..... Fastenings for studs or buttons.....	Mar. 22, 1870
100,989	Same..... Fluting-machine .....	Mar. 22, 1870
101,440	De Forest, David W., assignor to Richard Oliver, Brooklyn, N. Y. Window-shade fixture .....	Apr. 5, 1870
103,850	Defrees, Thomas W., South Bend, Ind. Car-coupling .....	June 7, 1870
105,784	De Freitas, John J., Springfield, Ill. Corn-harvester cutter.....	July 26, 1870
	Degen, Francis, and A. Pelise. (See Pelise and Degen.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,018	Degener, Fred. Otto, Brooklyn, E. D., N. Y. Inking apparatus for printing-presses.....	Dec. 13, 1870
	Deggeller, John, and William Landert. (See Landert & Deggeller.).....	
99,068	De Grath, Marinus, Chicago, Ill. Coffee-pot attachment.....	Jan. 25, 1870
99,654	De Guinon, R. V., South Bergen, N. J. Machine for making paper twine.....	Feb. 8, 1870
105,436	De Haven, David, New Orleans, La. Steering apparatus.....	July 19, 1870
105,437	Same.....Hull of vessels.....	July 19, 1870
105,438	Same.....Arrangement of upper works in river steamers.....	July 19, 1870
107,014	Same.....Paddle-wheel.....	Sept. 6, 1870
108,459	He Haven, Isaac, Allegheny City, Pa. Heating-stove.....	Oct. 18, 1870
108,241	Deininger, August H. F., Prussia. Disintegrating fibrous material for paper-pulp, &c.....	Oct. 11, 1870
108,242	Dekle, Isiah, Thomasville, Ga. Water-elevator.....	Oct. 11, 1870
106,136	De Knight, Charles H., Pittsburgh, Pa. Clothes-wringer.....	Aug. 9, 1870
100,017	De Lacy, Joseph M., Trenton, N. J. Steam-heater for burnishing-irons.....	Feb. 22, 1870
108,116	De La Mar, Joseph, assignor to self and John De Vries Eckhoff, Brooklyn, N. Y. Machine for blocking and stretching hats.....	Oct. 11, 1870
109,991	Delamarre, Charles, assignor to self, John A. Thurber, and Robert R. Benson, New York, N. Y. Manufacture of sugar or sirup from sweet-potatoes.....	Dec. 6, 1870
	De Lamater, C. H., et al. (See Rider, Alexander K., assignor.) (Two cases.).....	
	Delana, Lark, and J. G. Sisson. (See Sisson & Delana.).....	
100,268	De Landsee, A., France. Hydrocarbon burner.....	Mar. 1, 1870
	De Lang, John C., and George Smith. (See Powell, Thomas J., assignor.).....	
100,735	Delano, S. G., Argentine, Mich. Automatic cradle.....	Mar. 15, 1870
103,156	Delany, Thomas J., assignor to self and Clinton Lloyd, Loudoun County, Va. Railway-car coupling.....	May 17, 1870
	Delap, J. D., et al. (See Duskin & Sledge.).....	
108,980	De La Pena, Manoel, assignor to J. G. O. Guimaraes, New York, N. Y. Type-setting machine.....	Nov. 8, 1870
110,345	Delker, Frederick J., Ashland, Pa. Compound for purifying mine-water.....	Dec. 20, 1870
	Dell, William, and John Schroeffel. (See Schroeffel & Dell.).....	
	De Long, William M., et al. (See Davis, Biram C., assignor.).....	
103,931	Delude, Moses, Carrollton, Mich. Saw-mill.....	Nov. 8, 1870
4,216	Demarest, David M., New York, N. Y., John J. Demarest, Jersey City, and Nicholas H. Joralemon, Hoboken, N. J. Trade-mark..... (Design)	July 12, 1870
101,593	Demarest, William P., Brooklyn, N. Y. Shoe-trimming.....	Apr. 5, 1870
103,724	De Mesnil, Oscar, Belgium, and M. Eyth, Wurtemberg. Machinery for towing canal-boats.....	May 31, 1870
	Deming, John. (See Silver, Albert R., assignor.)..... (Two cases.)	
103,157	Deming, John, assignor to self and A. R. Silver, Salem, Ohio. Spoke-tenoning and hub-boring machine.....	May 17, 1870
	Demmen, Charles F., and James Thornton. (See Thornton & Demmen.).....	
109,879	De Montufar, Manuel, New York, N. Y. Insulator for telegraph-wires.....	Dec. 6, 1870
103,307	Dempsey, Price, Erie, Pa. Stove-grate.....	May 24, 1870
	De Navarro, José Francisco. (See Sergeant, Henry C., assignor.).....	
	Same.....(See Wagner, Franz, assignor.)..... (Reissue.)	
	Same.....(See Moore, Charles, assignor.).....	
	Denise, Tunis, et al. (See Vanderver & Denise.).....	
	Denison, Russell A., et al. (See Young, Solomon W., assignor.).....	
101,236	Denman, Daniel W., and William Tillotson, Detroit, Mich. Broiler.....	Mar. 29, 1870
105,790	Denn, Clayton, Philadelphia, Pa. Musical rocking-chair.....	Aug. 30, 1870
98,571	Dennett, Charles Colton, England. Construction of concrete arches for buildings, &c.....	Jan. 4, 1870
109,189	Dennett, Charles N., Amesbury, Mass. Carriage.....	Nov. 15, 1870
106,336	Denney, Samuel L., Christiana, Pa. Horse hay-rake. (Antedated Aug. 5, 1870.).....	Aug. 16, 1870
	Same.....(See Randolph, James L., assignor.).....	
106,138	Dennis, James, Churchville, N. Y. Nut-lock.....	Aug. 9, 1870
	Dennis, John, and Charles H. Weston. (See Weston & Dennis.).....	
	Dennis, William P. (See Mattson, Francis B., assignor.).....	
	Denny, A. D., et al. (See Bradley & Phillips, assignor.).....	
108,891	Denny, Saint Clair, Pittsburgh, Pa., and Israel L. G. Rice, Cambridge, Mass. Paper-cutting machine.....	Nov. 1, 1870
106,791	Densmore, Byron, New York, N. Y. Adjustment for pump-rods. (Antedated Aug. 24, 1870.).....	Aug. 30, 1870
106,792	Same.....Water-meter. (Antedated Aug. 24, 1870).....	Aug. 30, 1870
108,333	Same.....Sectional steam-generator.....	Oct. 18, 1870
	Densmore, J. D., and Peter A. La France. (See La France & Densmore.).....	
	Dent, Henry S., George W., and Frederick T., et al. (See Samuels, John L., assignor.)..... (Reissue.)	
	Dentan, Albert A. and D. G. (See Stevens, Charles L., assignor.).....	
	Denton, Dallas S., and William M. Wilson. (See Wilson & Denton.).....	
108,334	Denton, Drake W., Ithaca, N. Y. Roofing-fabric.....	Oct. 18, 1870
105,554	Denton, Eben, Braintree, Mass. Ships' topmast.....	July 19, 1870
104,940	De Poe, James H., Boonton, N. J. Meat-chopper.....	July 5, 1870
106,921	De Puy, Alexander T., assignor to R. Hoe & Co. Case-stand.....	Aug. 31, 1870
101,441	Derby, John K., Jamestown, N. Y. Washing-machine.....	April 5, 1870
104,123	Derham, Richard, England. Vegetable-washer.....	June 14, 1870
98,932	Deronc, Louis, San Francisco, Cal. Inclosed folding spring-bed.....	Jan. 18, 1870
104,124	Derriek, William E., assignor to self and George B. Garrison, Jordan, N. Y. Horse hay-fork.....	June 14, 1870
	De Rush, D. R., and W. P. Callahan. (See Callahan & De Rush.).....	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,346	Desgoffe, Jules Auguste, France. Hydraulic-press. (Antedated Dec. 9, 1870) ..	Dec. 20, 1870
98,476	Desky, Isaac, and Thomas A. Jennings, Seneca Falls, N. Y. Garment-hanger and size-ticket holder combined. (Antedated Dec. 24, 1869) ..	Jan. 4, 1870
100,269	De Smedt, E. J., assignor to New York Improved Anthracite Coal Company, New York, N. Y. Composition for roofing, paving, &c ..	Mar. 1, 1870
100,608	Same.....Composition for preserving timber and wood.....	Mar. 8, 1870
101,594	Same.....Composition for roofing, paving, &c ..	April 5, 1870
103,580	Same.....Manufacture of artificial fuel ..	May 31, 1870
103,581	Same.....Laying asphalt or concrete pavements or roads ..	May 31, 1870
103,582	Same.....Asphalt road and pavement ..	May 31, 1870
109,597	Same.....Asphalt pavement ..	Nov. 29, 1870
110,121	Same.....Asphalt road and pavement ..	Dec. 13, 1870
99,655	Dessau, Andreas F., Washington, D. C. Piano ..	Feb. 8, 1870
105,183	Deutschel, Abraham, Cleveland, Ohio. Ice-cutting machine ..	July 12, 1870
106,337	Deutz, Joseph, San Antonio, Tex. Gun-lock ..	Aug. 16, 1870
122,508	Devault, Michael, Charleston, Ill. Plow-grinder and polisher ..	May 3, 1870
105,439	De Veau, Samuel, Syracuse, N. Y. Washing-machine ..	July 19, 1870
102,922	Devlan, Patrick S., Jersey City, N. J. Composition for coating wood, metal, &c. Devlin, Lewis. (See Gotham, James M., assignor.)	May 10, 1870
	Devoe, B. G., et al. (See Fitch, Devoe & McLellan.)	
	Devoe Manufacturing Company. (See Miller, Herman, assignor.)	
109,190	Devoe, Justin, Meadville, Pa. Miter-box ..	Nov. 15, 1870
102,509	Devol, Jonathan L., Parkersburgh, W. Va. Churn. (Antedated April 29, 1870) ..	May 3, 1870
106,471	Devol, Jonathan L., and Atweel L. Peadro, Parkersburgh, W. Va. Railway-car coupling. (Antedated Aug. 4, 1870) ..	Aug. 16, 1870
100,126	Dew, James M. A., Chicago, Ill. Faucet ..	Feb. 22, 1870
102,661	Same.....Padlock ..	May 3, 1870
109,394	Dewe, John, Toronto, Canada. Car-seal ..	Nov. 22, 1870
99,169	Dewey, Daniel H., Canton, Ill. Platform-scale for hay or cattle ..	Jan. 25, 1870
4,165	Dewey, George H., et al. (See Dunbar & Fellows, assignors.)	
	Dewey, R. H., and Eliphalet N. Tillotson, assignors to Eliphalet N. and William E. Tillotson, Pittsfield, Mass. Reservoir for wells (Reissue) ..	Oct. 25, 1870
	Dewey, Rodney H., and Almon N. Allen. (See Allen & Dewey.)	
	Dewhurst, James E., et al. (See Snyder, William B., assignor.)	
100,270	De Witt, H. C., Waukegan, Ill. Vapor-burner ..	Mar. 1, 1870
102,510	De Witt, Thomas, assignor to John T. Maxson, Detroit, Mich. Punching apparatus ..	May 3, 1870
102,511	Same.....Pump ..	May 3, 1870
102,512	Same.....Washing-machine ..	May 3, 1870
102,377	De Witt, Wellman, Tallmadge, Mich. Conveyer-blank ..	April 26, 1870
105,555	Dexter, Andrew J., North Foster, R. I. Blacksmiths' tongs ..	July 19, 1870
105,921	Same.....Adjustable-link ..	Aug. 2, 1870
	Dexter, Chauncey, and Job Smythe. (See Smythe & Dexter.)	
109,395	Dexter, Henry R., Putnam, Conn. Window screen-frame ..	Nov. 22, 1870
	Dexter, Lambert & Co. (See Barton, Charles, assignor.)	
	Dexter, Lambert & Co. (See Lambert, Catholina, assignor.)	
107,670	Dexter, Norman, Bower Hill, Pa. Machinery for shaping the heads of horse-shoe-nails ..	Sept. 27, 1870
	Dexter, William S., and Thomas William Clark, trustees. (See Whelpley & Storer, assignors) ..	
	Dexter, William S., and Thomas William Clark, trustees. (See Whelpley & Storer, assignors) ..	
108,010	Deyo, Abram, Rockford, Ill. Clapboard-gauge ..	Oct. 4, 1870
106,673	De Zavala, Henry, New York, N. Y. Pump-rod connection for deep wells. (Antedated Aug. 11, 1870) ..	Aug. 23, 1870
99,541	D'Hereuse, Rudolph, New York, N. Y. Malting grain. ....	Feb. 8, 1870
3,921	Same.....Treating organic materials with air ..	April 19, 1870
100,571	Diaz, Juan Y., Cuba. Manufacture of fertilizers ..	Mar. 15, 1870
99,861	Dibble, A. J., Franklin, N. Y. Flour-bolt ..	Feb. 15, 1870
98,572	Dice, Noah, Xenia, Ind. Buckle ..	Jan. 4, 1870
108,335	Dick, Alexander, Buffalo, N. Y. Vise ..	Oct. 18, 1870
108,768	Same.....Broiler ..	Nov. 1, 1870
110,553	Dick, Charles James Adolph, France. Preventing incrustation of steam-boilers.	Dec. 27, 1870
105,922	Dick, James M., assignor to self and William H. Albro, Buffalo, N. Y. Frame for potato-digger and shovel-plows ..	Aug. 2, 1870
4,216	Same.....Shovel-plow and potato-digger combined. (Reissue) ..	Dec. 27, 1870
	Dick, W. C. (See McIntire, James, assignor.)	
104,435	Dickason, John, Vevay, Ind. Farm-gate ..	June 21, 1870
98,573	Dickason, John, Vevay, and George W. D. Kulp, Moore's Hill, Ind., assignors to John Dickason. Farm-gate ..	Jan. 4, 1870
109,499	Dickason, John S., Sulphur Well, Tenn. Cotton-planter ..	Nov. 22, 1870
110,122	Dickens, Simon, jr., Milwaukee, Wis. Oat-cleaner ..	Dec. 13, 1870
101,355	Dickerman, Charles C., Boston, Mass. Lock ..	Mar. 29, 1870
108,770	Same.....(See Read & Clapp, assignors.)	Nov. 1, 1870
	Same.....(See Bancroft, C. R., assignor.)	
100,609	Dickerson, Samuel H., Hudson, Mich. Well-borer ..	Mar. 8, 1870
102,662	Dickerson, Thomas S., and Rodney M. Whipple, Chicago, Ill. Process and apparatus for using liquid fuel for producing heat and light ..	May 3, 1870
109,396	Dickey, Andrew, assignor to John S. Perry, trustee and executor, Andrew Dickey, and Nathan B. Perry, Albany, N. Y. Heating-stove ..	Nov. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,783	Dickey, Andrew, and John S. Perry. ( <i>See Perry &amp; Dickey.</i> )	
103,583	Dickey, Benjamin F., Marshall Township, Mich. Gate .....	May 10, 1870
106,793	Same.....same.....	May 31, 1870
106,794	Dickey, James, Venango City, Pa. Removing deposits from oil-wells.....	Aug. 30, 1870
103,851	Same.....Torpedo for oil-wells.....	Aug. 30, 1870
109,880	Dickey, John T., Farmington, Ill. Saw-set.....	June 7, 1870
106,559	Dickey, Julius C., Titusville, Pa. Casing T for oil-wells .....	Dec. 6, 1870
100,507	Dickie, Robert, and Hugh K. Johnston, Bunker Hill, Ill. Plow .....	Aug. 23, 1870
103,584	Dickinson, Charles B., New York, N. Y. Slate-frame .....	Mar. 8, 1870
108,460	Dickinson, David A., Baltimore, Md. Preventing reverse motion in sewing-machines.....	May 31, 1870
	Same.....Car-starter.....	Oct. 18, 1870
106,560	Dickinson, Frederick Z., <i>et al.</i> ( <i>See Kehoe, Edward J., assignor.</i> )	
109,810	Dickinson, George W., Charleston, Ill. Weighing-scale.....	Aug. 23, 1870
110,215	Dickinson, Henry, Marlborough, Conn. Washing-machine.....	Dec. 6, 1870
106,036	Dickinson, Joseph L., Dubuque, Iowa. Lubricator.....	Dec. 20, 1870
	Dickson, Walter, Albany, N. Y. Corkscrew .....	Aug. 2, 1870
	Dickson, William, <i>et al.</i> ( <i>See Duskin &amp; Sledge.</i> )	
	Diebold, Charles, <i>et al.</i> ( <i>See Hintz, John C., assignor.</i> )	
101,835	Same.....( <i>See Haile, Robert, assignor.</i> )	
106,472	Diebold, Charles, assignor to E. L. Butterfield, Lebanon, Pa. Manufacture of building-blocks from slag .....	April 12, 1870
	Diebold, Charles, and Jacob Obernesser, assignors to Charles Diebold and Jacob Kiengle, Cincinnati, Ohio. Permutation lock .....	Aug. 16, 1870
99,656	Diehl, H. P., & Co. ( <i>See Johnson, Thomas J., assignor.</i> )	
102,235	Diehl, Joseph, Clayton, Pa. Sheet-metal roofing.....	Feb. 8, 1870
108,892	Dietsch, Anton, Franklin Station, Ill. Extension-table.....	April 26, 1870
103,852	Dietsch, Edward, assignor to self and Jacob C. Powell, Finley, Ohio. Plow .....	Nov. 1, 1870
108,769	Dietz, Andrew, New York, N. Y. Manufacture of glue.....	June 7, 1870
	Same.....Machine for breaking stone.....	Nov. 1, 1870
103,027	Dietzel, George, and John H. Vogt. ( <i>See Vogt &amp; Dietzel.</i> )	
100,508	Dieulafoy, George, France. Subcutaneous exhauster.....	May 17, 1870
99,862	Diffenderfer, J. D., Lewisburgh, Pa. School desk and seat .....	Mar. 8, 1870
104,941	Diggins, Henry M., Philadelphia, Pa. Refrigerator.....	Feb. 15, 1870
104,942	Dilger, Andrew, St. Louis, Mo. Pavement.....	July 5, 1870
104,943	Same.....Street-pavement.....	July 5, 1870
106,922	Dill, Joseph, Grand Rapids, Mich. Table for dovetailing-machines.....	July 5, 1870
110,123	Same.....Dovetailing-machine.....	Aug. 30, 1870
	Same.....Grooving-tool.....	Dec. 13, 1870
106,037	Dill, Joseph, and Dedrick Jordan. ( <i>See Jordan &amp; Dill.</i> )	
106,561	Dill, Richard M., Morgantown, Ind. Trace-holder for harness.....	Aug. 2, 1870
100,127	Dill, Thomas Bradford, Boston, Mass. Machine for manufacturing watch-cases.....	Aug. 23, 1870
109,723	Dillaway, Hiram, Sandwich, Mass. Mold for forming blown glassware.....	Feb. 22, 1870
102,663	Dille, James Madison, Cooperstown, Pa. Electro-magnetic burglar-alarm.....	Nov. 29, 1870
108,771	Dillen, Jonathan, Petroleum Centre, Pa. Safety derrick-lamp .....	May 3, 1870
106,333	Dillenback, Daniel, Galesburgh, Mich. Plow-jointer.....	Nov. 1, 1870
110,554	Diller, George W., Odell, Ill. Spring-seat for vehicles.....	Aug. 16, 1870
101,836	Dilley, J. W., Macomb, Ill. Land-roller.....	Dec. 27, 1870
105,440	Dillier, Joseph, Greensburgh, Ind. Wheat-drill.....	April 12, 1870
106,795	Dillingham, Moses W., Amsterdam, N. Y. Pencil-sharpener.....	July 19, 1870
104,715	Same.....same.....	Aug. 30, 1870
108,117	Dillon, William, Wheeling, West Va. Balance slide-valve.....	June 28, 1870
107,343	Dillon, William, Sonoma, Cal. Potato-digger.....	Oct. 11, 1870
107,344	Dimock, Ira, Florence, Mass. Spool show-case.....	Sept. 13, 1870
105,785	Dingee, Montgomery, and Samuel D. Roberts. ( <i>See Roberts &amp; Dingee.</i> )	
	Dingman, James, Decatur, Ill. Harrow.....	Sept. 13, 1870
108,336	Dinsmore, Warren A., assignor to self and Emily L. Geer, South Boston, Mass. Catamenial sack.....	July 26, 1870
101,986	Dion, Charles, New York, N. Y. Fluting-machine.....	Oct. 18, 1870
102,923	Disser, Caspar, West Union, Ohio. Shifting rail carriage-seat.....	April 19, 1870
107,599	Diston, Henry, Philadelphia, Pa. Packing-case for saws.....	May 10, 1870
108,011	Same.....Combined furnace or oven and tempering die.....	Sept. 20, 1870
	Same.....Saw.....	Oct. 4, 1870
	Diston, Henry, & Son. ( <i>See Taylor, Thomas, assignor.</i> )	
	Same.....( <i>See Rhodes, Edward, assignor.</i> )	
	Same.....( <i>See Rhodes, Edward, assignor.</i> ) (Two cases)..... (Design.)	
	Same.....( <i>See Milliman, William F., assignor.</i> )	
	Diston, Henry and Hamilton. ( <i>See Smith, John, assignor.</i> )	
103,432	Diston, Mary, Philadelphia, Pa. Wall-paper protector.....	May 24, 1870
109,881	Diston, Thomas S., assignor to self and Henry Diston & Sons, Philadelphia, Pa. Process for making concave circular saws.....	Dec. 6, 1870
4,182	Dithridge, Edward and Edward D., Pittsburgh, Pa. Lamp-chimney..(Reissue).....	Nov. 22, 1870
98,854	Dittmar, Carl, Prussia. Explosive compound .....	Jan. 18, 1870
99,069	Same.....Explosive agent, called xyloglodino .....	Jan. 25, 1870
99,070	Same.....Manufacture of xyloglodino and other explosive agents .....	Jan. 25, 1870
103,308	Dittman, Casper, Leacock, Pa. Nut-lock.....	May 24, 1870
105,050	Dittman, Casper, assignor to self and Graybill B. Swope, Upper Leacock Township, Pa. Hay-knife .....	July 5, 1870
103,997	Diven, Robert, New York, N. Y. Laundry-iron heater.....	June 7, 1870
104,125	Divine, Thomas, Charleston, S. C. Hair brush or comb.....	June 14, 1870
101,837	Dix, Samuel C., Neponset, Ill. Bag-fastener .....	April 12, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,562	Dixon, David B., Unionville, Mo. Grass-seed separator for mangers.....	Aug. 23, 1870
	Dixon, James R., <i>et al.</i> (See Hallock, Valentine H., assignor.)	
106,339	Dixon, Joseph, and Matthew B. Sampson, Eddyville, Iowa. Pitman connection for harvesters .....	Aug. 16, 1870
109,598	Dixon, Joseph A., New York, N. Y. Hook-attachment for seats.....	Nov. 29, 1870
	Dixon, William, and James T. Harvey. (See Harvey & Dixon.)	
	Dixson, A. H. (See Brattan, Thomas, assignor.)	
98,477	Doar, David Willson, Rochester, N. Y. Ash-sifter, leach, and smoke-house.....	Jan. 4, 1870
	Doane, Truman P. (See Wellington, Henry, assignor.)	
	Same.....same.	
108,012	Dobbins, David P., and James Sangster, Buffalo, N. Y. Brick-machine .....	Oct. 4, 1870
109,599	Dobbins, Robert, Binghamton, N. Y. Healing-salve .....	Nov. 29, 1870
103,309	Dockham, George F., Lynn, Mass. Machine for burring wool, &c., on the skin.	May 24, 1870
102,378	Dockstader, Lansing, assignor to Bradley & Hubbard, West Meriden, Conn. Coating and bronzing iron .....	April 26, 1870
4,302	Dodd, Amzi S., New York, N. Y. Carriage .....	Aug. 30, 1870
	Dodd, C. B., <i>et al.</i> (See Meredith, Samuel, assignor.)	
101,838	Dodd, Robert J., Orth, Ind. Apple corer and slicer .....	April 12, 1870
103,158	Doddridge, Loyal M., Mt. Pleasant, Ind. Milk-pail with strainer attached.....	May 17, 1870
108,982	Doddridge, William B., Hebron, Ind. Valve-gear for steam-engines .....	Nov. 8, 1870
106,259	Dodge, Charles C., Marshall, Mich. Switch-stand .....	Aug. 9, 1870
	Dodge, C. G., <i>et al.</i> (See Burrige, William H., assignor.)	
	Dodge, Daniel, Keeseville, N. Y. Nail-machine..... (Extension)	May 24, 1870
107,015	Dodge, Eliza D., Worcester, Mass. Cooking-table .....	Sept. 6, 1870
99,071	Dodge, Hezekiah, Albany, N. Y. Machine for disintegrating wood for paper-pulp .....	Jan. 25, 1870
101,716	Same.....Mop-head. (Antedated April 4, 1870) .....	April 12, 1870
105,556	Dodge, James F., Nashua, N. H. Wardrobe-bedstead .....	July 19, 1870
	Dodge, John H., and L. M. Ham. (See Ham & Dodge) .....	
	Same.....(Reissuc.)	
105,051	Dodge, Johnson, New Orleans, La. Coffee-pot .....	July 5, 1870
104,281	Dodge, Levi, Waterford, N. Y. Manufacture of paper .....	June 14, 1870
104,282	Same.....same.	June 14, 1870
103,028	Dodge, Lewis, Chicago, Ill. Construction of tunnels and dams. (Antedated May 14, 1870) .....	May 17, 1870
109,397	Same.....Press for the manufacture of artificial stone .....	Nov. 22, 1870
103,853	Dodge, Robert L., Gallatin, Mo. Book-repository .....	June 7, 1870
	Dodge, Thomas H. (See Taft, George C., assignor.)	
	Same.....(See Greeley & Buxton, assignors) .....	
	Same.....(Reissue.)	
103,159	Dodge, William C., Washington, D. C. Guide for sewing-machines.....	May 17, 1870
	Same.....(See Hailer, Lewis, assignor.)	
105,786	Dodge, William James, Syracuse, N. Y. Furnace for salt-boiling .....	July 26, 1870
110,555	Same.....Washing-machine.....	Dec. 27, 1870
102,379	Doe, William H., Oshkosh, Wis. Sash balance and lock .....	April 26, 1870
99,704	Doering, Charles, Charlestown, Mass. Tobacco-box .....	Feb. 15, 1870
	Doering, Justus, and William P. Uhlinger. (See Uhlinger & Doering.)	
101,237	Doerr, Heinrich, Milwaukee, Wis. Trunk .....	Mar. 29, 1870
99,298	Doerr, John H., Philadelphia, Pa. Chain or band .....	Feb. 1, 1870
	Doggett, W. F., <i>et al.</i> (See Bond, Thomas, assignor.)	
110,444	Dohan, James F., Binghamton, N. Y. Carriage-window. (Antedated Dec. 15, 1870) .....	Dec. 27, 1870
103,585	Dohn, George, Sacramento, Cal. Tongs for rigging .....	May 31, 1870
3,881	Dolan, Thomas, Philadelphia, Pa. Bedouin or Arab..... (Design)	Mar. 8, 1870
3,882	Same.....same..... (Design)	Mar. 8, 1870
3,964	Same.....Knitted fabric..... (Design)	April 12, 1870
3,965	Same.....Stocking-fabric..... (Design)	April 12, 1870
3,966	Same.....same..... (Design)	April 12, 1870
4,003	Same.....same..... (Design)	May 3, 1870
103,586	Same.....Latch. (Antedated May 20, 1870) .....	May 31, 1870
4,157	Same.....Stocking-fabric..... (Design)	June 21, 1870
4,158	Same.....Bedouin or Arab..... (Design)	June 21, 1870
4,300	Same.....Persian cloak..... (Design)	Aug. 23, 1870
4,301	Same.....same..... (Design)	Aug. 23, 1870
4,334	Same.....Knitted fabric..... (Design)	Sept. 6, 1870
	Same.....(See Hodgson, Joseph, assignor.) (Three cases)..... (Design.)	
	Dole, L. A., deceased, by Richard H. Garrigues, Salem, Ohio. Saw-gummer. (Extension) .....	Sept. 5, 1870
	Doll, Michael. (See Miller, Charles H., assignor.) (Two cases.)	
	Doll, Theodore, and Oliver C. Smith. (See Smith & Doll.)	
	Dolloff, Alpheus. (See Nelson, Hiram, assignor.)	
110,019	Dolph, George C., West Andover, Ohio. Land-roller .....	Dec. 13, 1870
	Dolph, George C., and Theodore E. King. (See King & Dolph.)	
104,283	Dolson, William B., Waterloo, Iowa. Millstone balance and cooler .....	June 14, 1870
103,116	Dom, Alexander, Mt. Healthy, Ohio. Supporting-prop for folding buggy-tops..	Nov. 8, 1870
110,445	Donaldson, James W., Fairfield, Cal. Grain-separator .....	Dec. 27, 1870
102,380	Donaldson, James W., and Daniel Sheets, Suisun, Cal. Needle .....	April 26, 1870
	Donaldson, James W., and Matthew M. Cooper. (See Cooper & Donaldson.)	
	Donaldson, John. (See Fahrney, William H., assignor.) .....	
	Same.....(Two cases.)	
103,854	Donato, Thomas, New York, N. Y. Window-blind .....	June 7, 1870
108,893	Donavan, Eliza Jane, assignor to self and W. T. Gibson, Indianapolis, Ind. Bee-hive .....	Nov. 1, 1870
100,990	Donnell, Samuel L., Humboldt, Tenn. Combined corn and cotton-seed planter and guano-distributor .....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,882	Donnellan, Charles E., assignor to self and McCord & Wheatley, Indianapolis, Ind. Postmarking stamp-canceling machine.....	Dec. 6, 1870
101,442	Donnellan, Charles E., Indianapolis, Ind. Tape-line box.....	April 5, 1870
109,302	Same.....Canceling-stamp.....	Nov. 15, 1870
104,284	Donnelly, Thomas, Pittsburgh, and James H. and Allen Anchors, Bear Creek Station, Pa. Conveying liquids.....	June 14, 1870
108,118	Donner, Charles R., Sonora, Cal. Feed-cutter.....	Oct. 11, 1870
106,340	Donoghue, William, Philadelphia, Pa. Extension-table slide.....	Aug. 16, 1870
100,271	Donor, H. E., assignor to self and Robert E. Brett, New York, N. Y. Umbrella-frame. (Antedated Feb. 17, 1870).....	Mar. 1, 1870
	Donor, H. E., et al. (See Howe, Albert K., assignor.)	
	Doelittle, Thomas B. (See Taft, George C., assignor).....(Reissue.)	
	Same.....(See Adams, Samuel W., assignor.)	
105,052	Dopp, H. William, assignor to self and James E. Thomson, Buffalo, N. Y. Stamp-canceler.....	July 5, 1870
98,574	Doremus, Edmfund, Rondout, N. Y. Clamp for holding staves.....	Jan. 4, 1870
4,217	Dorflinger, Chretien, Bryan, Pa. Glass lamp-shade.....(Design)	July 12, 1870
4,294	Dornan, John, Philadelphia, Pa. Carpet-pattern.....(Design)	Aug. 16, 1870
99,863	Dorr, Arthur W., Lake Valley, Cal. Tool for checking timber.....	Feb. 15, 1870
107,886	Dorr, Jesse A., Williamsport, Pa. Saw-mill.....	Oct. 4, 1870
	Dorré, Louis Philippe, and Désire Parfait Lefevre. (See Lefevre & Dorré.)	
	Dorsey, Owen, Newark, Ohio. Harvester-rake.....(Extension)	Mar. 3, 1870
110,216	Dorsey, William D., Decatur, Ill. Portable loading and dumping machine.....	Dec. 20, 1870
98,749	Dorst, John H., New Albany, Ind. Faucet.....	Jan. 11, 1870
100,991	Dorton, James T., and Stephen G. Eubank, Wellington, Mo. Washing-machine.....	Mar. 22, 1870
	Dorwin, Thomas. (See Du Bois, Joseph S., assignor.)	
108,983	Dotch, Julius Edmund, Washington, D. C. Preserving meat, fish, oysters, &c. (Antedated, Oct. 29, 1870).....	Nov. 8, 1870
	Doty, Chambers S. (See Keith, E. H., assignor.)	
107,231	Doty, Edgar F., Ravenna, Ohio. Ladies' boot.....	Sept. 13, 1870
106,674	Doty, Edward M., Joel L. Little, and Peter A. Schmidler, assignors to Edward M. Doty, Springfield, Ohio. Revolving road-scraper.....	Aug. 23, 1870
102,924	Doty, Ellis, Janesville, Wis. Machine for punching metal.....	May 10, 1870
101,356	Doty, Ellis, and H. Richardson, assignors to Doty Manufacturing Company, Janesville, Wis. Machine for shearing metal.....	Mar. 29, 1870
102,784	Doty, Ellis, assignor of one-half interest to Thomas Judd, Janesville, Wis. Gas-generator.....	May 10, 1870
109,303	Doty, Henry Harrison, England. Apparatus for burning paraffine and other hydrocarbon oils.....	Nov. 15, 1870
103,310	Doty, James, and Asa H., West Falls, N. Y. Towing-hooks for canal-boats.....	May 24, 1870
4,017	Doty, J. W., Lockport, N. Y. Pitman connection for harvesters..(Division B, reissue).....	June 7, 1870
98,575	Doty, William M., Woodbridge, N. J. Pruning-hook.....	Jan. 4, 1870
100,272	Doubler, John W. H., assignor to self, J. M. Clendening, S. C. Hayes, and Thomas F. Rooney, Chicago, Ill. Railway-car coupling. (Antedated Feb. 16, 1870).....	Mar. 1, 1870
105,184	Doud, Elihu, Oshkosh, Wis. Mower and reaper sickle sharpener.....	July 12, 1870
100,273	Douden, Edwin, assignor to self and Charles Broome, Lykens, Pa. Breaker-roller.....	Mar. 1, 1870
101,109	Dougherty, Eliphalet, assignor to self and J. M. Flood, North Lewisburgh, Ohio. Step-spindle.....	Mar. 22, 1870
103,725	Same.....Water-wheel.....	May 31, 1870
105,318	Dougherty, James, Philadelphia, Pa. Blowing-machine.....	July 12, 1870
106,260	Dougherty, John B., assignor to self, Robert E. Sherlock, Joseph C. Schanch, Albert G. Wheeler, and Patrick H. Lawler, Rochester, N. Y. Machine for manufacturing hoops.....	Aug. 9, 1870
110,217	Dougherty, Joseph W., Chicago, Ill. Water-filter.....	Dec. 20, 1870
110,446	Dougherty, Tiberius, Philadelphia, Pa. Snow-plow for railways.....	Dec. 27, 1870
103,726	Douglas, Anson B., Clyde, Ohio. Saw-gummer.....	May 31, 1870
104,126	Douglas, Bailey B., Newark, N. J. Hydrocarbon vapor machine for illuminating purposes.....	June 14, 1870
109,191	Douglas, Charles A., Franklin, N. Y. Faucet.....	Nov. 15, 1870
107,345	Douglas, Charles H., Hartford, Conn. Sled.....	Sept. 13, 1870
107,346	Same.....Saw-table.....	Sept. 13, 1870
105,657	Douglas, Frank, Norwich, Conn. Planing and molding machine.....	July 26, 1870
106,139	Same.....Planing-machine.....	Aug. 9, 1870
107,671	Same.....Blind-slat tenoning-machine.....	Sept. 27, 1870
107,232	Douglas, Joseph V., assignor to self and James A. Craig, Philadelphia, Pa. Roofing compound.....	Sept. 13, 1870
98,674	Douglas, Joseph W., assignor to W. and B. Douglas, Middletown, Conn. Adjustable attachment of pump-barrels to their bases.....	Jan. 11, 1870
102,664	Same.....Pump-valve.....	May 3, 1870
101,443	Douglas, Nathan, assignor to self and Frank Douglas, Goshen, Ind. Chimney-cowl.....	April 5, 1870
102,665	Douglas, Richard A., Philadelphia, Pa. Seasoning wood.....	May 3, 1870
110,124	Douglas, William G., and Hugh T. Warrenton, Va., and John Milton Reed, Omaha, Neb. Machine for separating cockle from wheat.....	Dec. 13, 1870
108,984	Douglass, James A., Altoona, Pa. Bee-hive.....	Nov. 8, 1870
	Douglass, Richard A. (See Jerome, Chauncey, assignor.)	
102,785	Douglass, Samuel, Kalamazoo, Mich. Fire-tongs.....	May 10, 1870
	Douk, Horace, and Isaac C. Downes. (See Abbott, Downes, and Douk, assignors.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,233	Douthett, William C., Chicago, Ill. Traction-engine. (Antedated Sept. 1, 1870.)	Sept. 13, 1870
100,509	Dow, Edward C., and Gilbert B. Hill. (See Hill and Dow.)	
	Dow, Edwin O., Chicago, Ill. Stop for billiard-wires.	Mar. 8, 1870
102,096	Dow, John M. (See Girond, Victor, assignor.)	
	Dow, Joseph H., assignor to self and Darius Wilcox, Birmingham, Conn. Operating fan-tremolos	April 19, 1870
101,444	Dow, O. L., Hancock, N. H. Butter-worker	April 5, 1870
102,513	Downer, Andrew, Hammondsville, Ohio. Pruning-hook	May 3, 1870
107,672	Downes, Charles H., Hudson City, N. J. Pencil-case	Sept. 27, 1870
101,110	Downes, Isaac C., and Horace Douk, assignors to selves and Stephen J. Abbott, Lewiston, Me. Drop-wire supporting bar or plates of warping-machines	Mar. 22, 1870
99,072	Downie, Hay, and Isaac Blue Harris, Scotland. Shoe for horses	Jan. 25, 1870
4,218	Downing, B., and N. L. Brundage. (See Brundage & Downing.)	
	Downing, George W., assignor to Redfield & Rice, Manufacturing Co., New York, N. Y. Handle of spoons, forks, ladles, &c. (Design)	July 12, 1870
101,595	Downing, William H., Pioneer, Pa. Lifting-clamp for pumps. (Antedated Mar. 29, 1870.)	April 5, 1870
106,563	Same.....Tubing-clamp	Aug. 23, 1870
102,097	Downs, Nelson H., Birmingham, Conn. Concrete pavement	April 19, 1870
99,170	Dows, Gustavus D., assignor to self, Calvin D. Dows, and George S. Cushing, Boston, Mass. Soda-fountain	Jan. 25, 1870
	Dows, Gustavus D., and Calvin, <i>et al.</i> (See Hallowell, Albert, assignor.) (Reissue.)	
	Same.....same.	
105,658	Dowson, Henry, Springfield, Ill. Wood-pavement	July 26, 1870
107,764	Doyle, John, Hoboken, N. J. Curtain-fixture	Sept. 27, 1870
109,117	Doyle, John, Hoboken, N. J., and Timothy A. Martin, New York, N. Y. Rotary pump	Nov. 8, 1870
99,299	Doyle, Patrick, Newark, N. J. Mold for making combined ingots of steel and iron	Feb. 1, 1870
104,285	Doyle, Peter, and Frederick P. Colton, Hartford, Conn. Compound for polishing and cleaning marble	June 14, 1870
100,992	Doyle, William, Albany, N. Y. Base-burning parlor cooking-stove	Mar. 22, 1870
4,260	Same.....Birmingham, Pa. Jelly-glass (Design)	July 26, 1870
	Same.....(See Atterbury, Thomas B., assignor.)	
109,304	Doyle, William E., Eaton, Ohio. School-desk	Nov. 15, 1870
110,020	Drahota, Rudolf, Philadelphia, Pa. Hinge	Dec. 13, 1870
109,600	Drake, Ellis, Stoughton, Mass. Projectile	Nov. 29, 1870
101,717	Drake, James A., and William R. C. Clark, New Orleans, La. Earth-closet	April 12, 1870
103,029	Same.....same	May 17, 1870
105,053	Same.....same	July 5, 1870
106,564	Drake, James A., assignor to self and Mary E. B. Clark, New Orleans, La. Earth-closet	Aug. 23, 1870
106,565	Same.....same	Aug. 23, 1870
106,566	Same.....same	Aug. 23, 1870
105,185	Same.....same	July 12, 1870
	Drake, Jasper N., Liberty, Mich. Snow-plow	
107,765	Drake, John Robert. (See Valentine, William P., assignor.)	
99,542	Drake, Philander N., and David Drummond, McGregor, Iowa. Splint-plane	Sept. 27, 1870
103,998	Drake, Robert, Newark, N. J. Sadiron-heater	Feb. 8, 1870
109,398	Drake, Thomas, Philadelphia, Pa. Combined roaster and boiler	June 7, 1870
	Drake, Whitfield H., Musconetcong, N. J. Lawn-mower	Nov. 22, 1870
110,021	Draper, F., & Co. (See Sawyer, Joseph W., assignor.)	
110,218	Draper, George, Hopedale, Mass. Trumpet for spinning-machines	Dec. 13, 1870
110,556	Same.....Machine for beaming yarn or warp	Dec. 20, 1870
	Same.....Drawing-frame	Dec. 27, 1870
	Draper, George, & Son. (See Richards, Isaac P., assignor.)	
3,858	Same.....(See Knight, George W., assignor.)	
	Draper, Virgil, assignor to Oscar M. Draper, North Attleborough, Mass. Device for swaging chain-links	Mar. 1, 1870
105,054	Same.....Machine for attaching ornaments to chain-links	July 5, 1870
106,140	Draper, William F., Hopedale, Mass. Spinning-ring	Aug. 9, 1870
102,514	Same.....Spindle-bolster	Aug. 23, 1870
108,461	Draper, William F., and Joseph B. Bancroft, Hopedale, Mass. Spindle-step cap	May 3, 1870
103,119	Dreceson, Bartholdt I., Marion County, Tex. Cotton-picker	Oct. 18, 1870
99,414	Dreher, Jurias G., Pine Grove, Pa. Tobacco-cutter	Oct. 11, 1870
	Drescher, Louis, New York, N. Y. Electro-magnetic machine for medical purposes	Feb. 1, 1870
4,029	Drew, Charles B., assignor to Underhill Edge Tool Company, Boston, Mass. Ax. (Design)	May 17, 1870
	Drew, Charles H., <i>et al.</i> (See Wright & Rowe, assignors.)	
99,073	Drew, David A., Philadelphia, Pa. Carpet-cleaning machine	Jan. 25, 1870
	Drew, William H., and Joseph Paradis. (See Paradis & Drew.)	
106,261	Dreyfus, Isidore, New York, N. Y. Lubricator	Aug. 9, 1870
	Same.....same	Nov. 8, 1870
	Dreyfoos, Klein & Company. (See Klein & Jacobs, assignors.)	
98,675	Dripps, Isaac, Fort Wayne, Ind. Railway-car truck	Jan. 11, 1870
	Driscoll, J. W., and William G. Schmidlin. (See Schmidlin & Driscoll.) (Reissue.)	
	Same.....same	
	Same.....same. (Reissue.)	
104,944	Drisko, Alonzo S. and Ormander H., Boston, Mass. Slat for bedsteads	July 5, 1870
	Drisko, Perrin C. (See Chase, Andrew J., assignor.)	
	Drogat, Jean, and Pierre François Ramel. (See Ramel & Drogat.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,236	Dronsfield, Joseph S., England. Card-grinder.	April 26, 1870
99,171	Drown, Thomas M., assignor to W. A. Drown, Philadelphia, Pa. Water-proof fabric	Jan. 25, 1870
	Drown, William A., & Co. (See Tate, William J., assignor.)	
	Drown, William A., jr. (See Plumb, H., assignor.)	
	Same.....(See Martin, James W., assignor.)	
	Same.....(See Plumb, Hiram, assignor.)	
100,872	Drowne, Simeon W., Norwich, Conn. Latch.	Mar. 15, 1870
104,833	Same.....Key-hole escutcheon	June 28, 1870
98,933	Drummond, David, McGregor, Iowa. Screw-driver.	Jan. 18, 1870
	Drummond, David, and Philander N. Drake. (See Drake & Drummond.)	
109,883	Dubois, George S., Jersey City, N. J. Steam-boiler	Dec. 6, 1870
109,192	Dubois, Isaac, Boonesborough, Iowa. Device for cutting and shearing metals.	Nov. 15, 1870
101,238	Du Bois, John, and Edwin F. Beugler, Williamsport, Pa. Fastening for cutter-heads, pulleys, &c	Mar. 29, 1870
4,047	Du Bois, John, assignor to Joseph C. Du Bois, Millerton, Cal. Cotton-gin. (Re-issue).	June 28, 1870
109,119	Du Bois, Joseph S., assignor to self and Thomas Dorwin, St. Louis, Mo. Railway sleeping-car.	Nov. 8, 1870
102,098	Du Bois, Richard C., Washington, D. C. Trunk-bedstead.	April 19, 1870
	Dubrul, Napoleon, and Emery E. Hardy. (See Hardy & Dubrul.)	
102,099	Dubuisson, George W., Norwich, Conn. Thill-coupling.	April 19, 1870
105,786	Same.....Sash-lock	July 26, 1870
100,381	Ducastel, Arsene, New York, N. Y. Horse-collar.	Mar. 1, 1870
102,786	Duchemin, William, assignor to George B. Bigelow, trustee, Boston, Mass. Method of making turned sewed shoes.	May 10, 1870
109,500	Same.....Machine for molding, rounding, and channeling boot and shoe soles.	Nov. 22, 1870
	Duchman, George. (See Geahr, William, assignor.)	
109,884	Duckworth, John C., Pittsfield, Mass. Harness-operating mechanism for looms.	Dec. 6, 1870
108,692	Ducsh, Henry, Baltimore, Md. Rotary disintegrator	Oct. 25, 1870
110,022	Dudgeon, Richard, New York, N. Y. Rotary engine.	Dec. 13, 1870
108,337	Dudley, Benjamin F., Boston, Mass. Finishing copper-plates.	Oct. 18, 1870
102,515	Dudley, Charles G., and Jacob Gulden, Keyport, N. J. Shaft or pole coupling for carriages	May 3, 1870
	Dudley, George D., et al. (See Sherwood, Woods & Dudley, assignors). (Two cases.)	
	Dudley, George D., and Daniel Sherwood. (See Sherwood & Dudley).. (Design.)	
	Dudley, William J., et al. (See Bollivant, Josiah, assignor.)	
106,923	Dudley, William W., Centreville, Ind. Liquid slating for forming blackboards, &c	Aug. 30, 1870
109,724	Duempelmann, Edward, Washington, D. C. Concrete for paving and roofing.	Nov. 29, 1870
102,198	Duffee, John L., Washington, D. C. Bronzing and gilding.	April 19, 1870
3,962	Duffee, John L., assignor of one-third interest to John H. Johnson, Washington, D. C. Bronzing and gilding	May 3, 1870
99,172	Duffey, M. C., Washington, D. C. Flexible joint for water-pipes.	Jan. 25, 1870
	Dutfield, Divie Bethune. (See Mack, William B., assignor.)	
106,675	Duffner, William, Petersburg, Ind. Spinning-machine.	Aug. 23, 1870
108,693	Duffus, George H. S., assignor to self and Henry J. Davison, Baltimore, Md. Concrete for pavements, &c.	Oct. 25, 1870
	Duffy, James. (See Grogan, John W., assignor.)	
103,030	Duffy, James F., and William P. Fraley, said Fraley assignor to said Duffy, Chicago, Ill. Spring bed-bottom.	May 17, 1870
101,239	Duffy, J. S., Battle Ground, Ind. Cotton and hay press.	Mar. 29, 1870
93,855	Dugdale, James K., White Water, Ind. Clothes-washer.	Jan. 18, 1870
98,856	Same.....same	Jan. 18, 1870
101,937	Dugdale, Samuel G., Richmond, Ind. Slate-washer.	April 19, 1870
	Dugdale, Thomas A., and William P. Erwin. (See Erwin & Dugdale.)	
	Same.....same.	
3,825	Dulaney, George L., Mechanicsburgh, Pa. Sewing-machine.	Feb. 8, 1870
102,787	Same.....Tension-device for thread in sewing-machines.	May 10, 1870
106,796	Same.....Tension-device for sewing-machines.	Aug. 13, 1870
103,311	Du Laney, George L., and James S. Huston, Mechanicsburgh, Pa. Loop for harness	May 24, 1870
105,055	Dull, Joseph H., assignor to Blymyer, Day & Co., Mansfield, Ohio. Tread-power.	July 5, 1870
97,750	Duly, Albert A., New York, N. Y. Step for street-car.	Jan. 11, 1870
103,433	Du Motay, Cyrien Marie Tessie, France. Process for the treatment of ore.	May 24, 1870
103,434	Same.....Process of extracting silver and gold from arseni-sulphurets of lead, copper, &c	May 24, 1870
108,462	Same.....Treating copper pyrites.	Oct. 18, 1870
109,873	Dump, Jacob, Kingston, Ohio. Carriage-wheel hub.	Mar. 15, 1870
108,338	Dunbar, Alexander, New York, N. Y. Snow-plow.	Oct. 18, 1870
109,305	Dunbar, Alvin T., and James H. Fellows, assignors to A. T. Dunbar and George H. Dewey, Alba, Pa. Horse hay-fork.	Nov. 15, 1870
108,985	Dunbrack, Charles S., Swampscott, Mass. Insole for manufacturing shoes. (Antedated November 7, 1870).	Nov. 8, 1870
109,399	Same.....Last	Nov. 22, 1870
108,772	Duncan, George, assignor to self and William Blackmore, San Francisco, Cal. Baling-press.	Nov. 1, 1870
104,564	Duncan, Thomas, Brookville, Md. Buckle.	June 21, 1870
109,193	Duncan, William, and Calvin C. Rowell, Lebanon, N. H. Electro-magnetic apparatus for protecting safes.	Nov. 15, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,341	Duncan, William, Spring Hill, Ind. Hames for harness.....	Aug. 16, 1870
100,274	Dunderdale, Cleaveland F., New York, N. Y. Carbureter.....	Mar. 1, 1870
100,736	Same..... Apparatus for the production of ozone.....	Mar. 15, 1870
100,737	Same..... Apparatus for forcing air into carbureters or railroad-cars.....	Mar. 15, 1870
109,601	Same..... Apparatus for the manufacture of ozone.....	Nov. 29, 1870
101,111	Dunham, German D., Chicago, Ill. Holder for diamonds.....	Mar. 22, 1870
	Dunham, Isaac A., North Bridgewater, Mass. Shoemakers' edge-plane. (Ex- tension).....	June 22, 1870
4,030	Dunham, John S., St. Louis, Mo. Label..... (Design).....	May 17, 1870
99,416	Dunham, Theodore R., Newark, N. J. Clasp for trunks, &c.....	Feb. 1, 1870
	Dunham, William C. (See Eaton, Ithamar F., assignor.)	
103,160	Dunkerly, Walter, Woonsocket, R. I. Forge-bonnet.....	May 17, 1870
102,925	Dunklee, B. Wells, Boston, Mass. Cooking-range.....	May 10, 1870
99,765	Dunks, Charles H., Detroit, Mich. Spring bed-bottom.....	Feb. 15, 1870
	Dunlap, Charles W. (See Murray, Edgar, assignor.)	
	Dunlap, William R., and James D. Bryson. (See Bryson & Dunlap.)	
103,986	Dunn, Alpheus C. and Isaac L., New York, N. Y. Screw spike for railroads. (Antedated October 28, 1870).....	Nov. 8, 1870
100,382	Dunn, Frederick, Pulaski, N. Y. Barley-fork.....	Mar. 1, 1870
98,934	Dunn, John, assignor to self and Jonathan Stone, Charlestown, Mass. Reclining and extension chair.....	Jan. 13, 1870
108,339	Dunn, John, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Lamp.....	Oct. 13, 1870
100,128	Dunn, John D., Griffin, Ga. Combined cotton-chopper and cultivator.....	Feb. 22, 1870
101,357	Dunn, McCann, Bloomington, Ill. Oven.....	Mar. 29, 1870
4,307	Dunn, Robert, assignor to Waterbury Clock Company, Brooklyn N. Y. Clock case..... (Design).....	Aug. 30, 1870
4,308	Same..... Clock case..... (Design).....	Aug. 30, 1870
4,309	Same..... same..... (Design).....	Aug. 30, 1870
4,421	Same..... same..... (Design).....	Oct. 13, 1870
4,524	Same..... same..... (Design).....	Dec. 20, 1870
	Dunn, R. A. (See Guttridge, D. L., assignor.)	
102,666	Dunn, William R., assignor to self, R. T. Nelson, and Joseph Williams, Alton, Ind. Machine for cutting vegetables.....	May 3, 1870
103,031	Dunnigan, Joseph A., Mexico, Mo. Saddle-stirrup.....	May 17, 1870
98,935	Dunning, William B., Geneva, N. Y. Compound railway-rail.....	Jan. 13, 1870
101,718	Same..... Base-burning stove for steam-heating boiler.....	April 12, 1870
105,186	Dunniway, William G., and Harrison Osborn, New Cumberland, Ind. Mill- stone dress.....	July 12, 1870
	Duparquet, Louis, and Elie Moneuse. (See Moneuse & Duparquet)..... (Reissue.)	
99,300	Dupas, A. E., New Orleans, La. Electro-magnetic machine.....	Feb. 1, 1870
107,234	Same..... Gas-burner.....	Sept. 13, 1870
104,716	Dupas, Antoine E., and Arthur Barbarin, New Orleans, La. Apparatus for carbureting air.....	June 23, 1870
106,473	Durand, Fred, and William F. Gilbert, Derby, Conn. Vegetable-knife.....	Aug. 16, 1870
108,463	Durant, Edward G., Northampton, Mass. Table-cutlery.....	Oct. 13, 1870
108,464	Durant, Edward J., Lebanon, N. H. Ventilator.....	Oct. 13, 1870
107,766	Durfee, Z. S., Troy, N. Y. Ingot-mold.....	Sept. 27, 1870
101,596	Durgin, H. J., assignor to James Chase, Rochester, N. Y. Revolving center- rest for wood-lathes.....	April 5, 1870
	Durgin, Horace T., et al. (See Hallowell, Albert, assignor.)	
104,436	Durham, Charles T., James Wood, and Theodore Hair, Norristown, Pa. Gauge- knife for cutting leather.....	June 21, 1870
103,161	Durkee, George B., Alden, New York. Axle-box for carriages.....	May 17, 1870
100,510	Durran, John H., assignor to self and William Lombard, Aurora, Ill. Ratchet and pawl. (Antedated February 26, 1870).....	Mar. 8, 1870
106,141	Duryea, Wright, Glen Cove, N. Y. Electro-magnetic low-water alarm for steam-boilers.....	Aug. 9, 1870
106,142	Same..... Electro-magnetic low-water detector for steam-boilers.....	Aug. 9, 1870
	Duryce, Henry W., et al. (See Jennings, Frederick S., assignor.)	
107,167	Duskin, Lindsay, and Benjamin Sledge; said Duskin assignor to William Dick- son and J. D. Delap, Thomasville, N. C. Fan-blower for blacksmiths' forges.....	Sept. 6, 1870
109,501	Dustan, John H., Spartansburgh, Pa. Washing-machine. (Antedated Novem- ber 19, 1870).....	Nov. 22, 1870
106,038	Dutcher, Warren Whitney, Hopedale, Mass. Loom-temple.....	Aug. 2, 1870
106,797	Dutcher, Warren W., assignor to the Dutcher Temple Company, Hopedale, Mass. Roller-temple for looms.....	Aug. 30, 1870
107,168	Same..... Loom-temple.....	Sept. 6, 1870
	Duthie, James, and John De Witt Brinckerhoff. (See Brinckerhoff & Duthie.)	
4,198	Dutton, Joseph M., Rochester, N. Y. Boot and shoe pattern..... (Reissue).....	July 5, 1870
4,124	Dutton, Rufus, Yonkers, N. Y. Harvester..... (Division A, reissue).....	Sept. 20, 1870
4,125	Same..... same..... (Division B, reissue).....	Sept. 20, 1870
4,139	Same..... same..... (Reissue).....	Oct. 4, 1870
4,217	Same..... same..... (Reissue).....	Dec. 27, 1870
108,120	Duus, Anthony, San Francisco, Cal. Grain-separator.....	Oct. 11, 1870
100,383	Duval, George R., Salem, Oregon. Gang-plow.....	Mar. 1, 1870
105,923	Duval, Jules, assignor to Richard T. and Charles D. Sprague, New Orleans, La., Process of separating fibers from cotton-seed.....	Aug. 2, 1870
105,319	Duvall, Alfred, Baltimore, Md. Treating vitriolized phosphates.....	July 12, 1870
107,169	Same..... Machine for washing and screening ores and fertilizers.....	Sept. 6, 1870
107,600	Same..... Apparatus for roasting and drying ores and other materials.....	Sept. 20, 1870
99,657	Duvall, Charles F., Milwaukee, Wis. Shaft-coupling. (Antedated Feb. 5, 1870).....	Feb. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,032	Duval, Joseph, and John Winterbottom, Kewanee, Wis. Head-block for saw-mills	May 17, 1870
99,543	Duval, Lewis, Big Spring, Ky. Hand-cultivator	Feb. 8, 1870
103,162	Duval, William T., Georgetown, D. C. Water-wheel	May 17, 1870
105,924	Same. Machinery for the manufacture of ice	Aug. 2, 1870
108,571	Dwelle, Charles W., St. Louis, Mo. Manufacture of white lead	Oct. 25, 1870
103,033	Dwelle, Lucius H., Dorchester, Mass. Wood-lathe	May 17, 1870
100,738	Dwight, Edmund P., Philadelphia, Pa. Railway-rail joint	Mar. 15, 1870
101,240	Dwight, Solomon, and William B. Chambers, Decatur, Ill. Wheeled cultivator	Mar. 29, 1870
	Dwyer, John, administrator. (See McLaughlin, Francis, deceased.)	
101,839	Dwyer, Patrick J., Elizabeth Port, N. J. Oil-can	April 12, 1870
108,572	Dyatt, William, New York, N. Y. Device for operating skylights	Oct. 25, 1870
101,112	Dye, A. J., New Orleans, La. Steam ditching-machine	Mar. 22, 1870
107,170	Dye, Lewis R., Cranberry, N. J. Axle-box for carriages	Sept. 6, 1870
	Dyer, Elisha. (See Young, Solomon W., assignor.)	
106,568	Dyer, Hugh, Fort Scott, Kansas. Hand corn-planter	Aug. 23, 1870
4,057	Dyer, Morgan, Elmira, N. Y. Step and hitching-post. (Design.)	May 24, 1870
108,987	Dyer, Philip, jr., Abram Parker, and William B. Way, Pontiac, Mich. Lock-nut	Nov. 8, 1870
105,056	Eads, James B., St. Louis, Mo. Pump	July 5, 1870
102,331	Eager, Charles P., Boston, Mass. Ventilated horse-cover	April 26, 1870
3,936	Eager, Charles P., assignor to Penuel B. Eager, Boston, Mass. Ventilated horse-cover (Reissue)	April 26, 1870
98,936	Eagle, Robert N., Washington, D. C. Lamp-chimney	Jan. 18, 1870
98,937	Same. same	Jan. 18, 1870
107,465	Same. Opelousas, La. Electro gas-lighting apparatus	Sept. 20, 1870
102,788	Eames, Charles J., New York, N. Y. Medical compound	May 10, 1870
	Eames, Charles J., et al. (See Lister, Lister & Eames.)	
	Eames, Charles T., Milford, Mass. Boot-tree. (Extension)	May 24, 1870
100,384	Eames, Horace N., Newport, N. Y. Harness-ring	Mar. 1, 1870
	Eames, Moses. (See Leclerc, François, assignor.)	
104,286	Eames, William M., Ashtabula, Ohio. Ventilating-attachment for stoves	June 14, 1870
	Earl, William. (See Barbour, Joseph W., assignor.)	
	Earl, William, et al. (See Smith & Priest, assignors) (Reissue.)	
	Same. (See Smith, Priest & Earl.)	
	Earle, Enoch, et al. (See Fifield, Levi W., assignor.)	
110,125	Earle, James M., Springfield, Mass. Coffee, tea, and spice can	Dec. 13, 1870
107,887	Earle, John T., Danbury, Conn. Machine for felting and hardening hat-bodies	Oct. 4, 1870
	Earle, Oscar F. (See Bisbee, Albert, assignor) (Reissue.)	
99,173	Earle, Timothy, Washington, D. C. Egg-beater	Jan. 25, 1870
104,839	Same. Valley Falls, R. I. Fruit-jar	June 28, 1870
105,057	Same. Smithfield, R. I. Egg-beater	July 5, 1870
	Same. (See Dearborn, Gilbert K., assignor) (Two cases.)	
107,673	Earle, Timothy, Valley Falls, Smithfield, and Gilbert K. Dearborn, Pawtucket, R. I., assignors by mesne assignments to Timothy Earle and E. D. Goodrich. Egg-beater	Sept. 27, 1870
104,287	Earl, E. Edward, Brooklyn, and J. B. Hunter, New York, N. Y. Gate-latch	June 14, 1870
107,235	Earlywine, Nathan, Centreville, Iowa. Planter and cultivator	Sept. 13, 1870
104,288	Earnest, William H., assignor of one-half interest to Jacob Fromer, Parkersburgh, W. Va. Crib and cradle	June 14, 1870
	Earth-Closet Company. (See Girdlestone, Henry J. and John W., assignors.)	
	Same. (See Moule & Girdlestone, assignors) (Two cases) (Reissue.)	
102,516	Eason, James M., Charleston, S. C. Stump-extractor	May 3, 1870
102,100	Easte, Charles H., South Boston, Mass. Hames-attachment	April 19, 1870
106,342	Eastes, William T., Summitville, Ind. Harvester-rake	Aug. 16, 1870
106,343	Same. Invalids' chair and lounge	Aug. 16, 1870
	Eastham, William W. (See Morris, George G., assignor.)	
109,120	Eastman, Albert P., Washington, D. C. Apparatus for parlor croquet	Nov. 8, 1870
	Eastman, C. H., et al. (See Barlow, Ashbell P., assignor) (Reissue.)	
105,925	Eastman, James C., Nashua, N. H. Stop-plate for hydrants	Aug. 2, 1870
103,587	Eastman, William W., Meadville, Pa. Bearing for sheaves	May 31, 1870
104,945	Eastman, William W., and Francis B. Marden, Meadville, Pa. Jar for well-drills	July 5, 1870
99,417	Eastwood, C. W., New York, N. Y. Milk-box	Feb. 1, 1870
106,344	Eastwood, Isaac, Lanark, Ill. Plow	Aug. 9, 1870
103,243	Same. same	Oct. 11, 1870
103,312	Eaton, Asahel K., Piermont, N. Y. Tool and wheel for cutting and polishing iron, steel, and other materials	May 24, 1870
105,320	Same. Manufacture of tools for cutting, grinding, and polishing	July 12, 1870
106,143	Same. Manufacture of paper-pulp	Aug. 9, 1870
4,203	Same. New York, N. Y. Manufacture of paper-pulp from straw, &c. (Reissue)	Dec. 20, 1870
103,573	Eaton, Charles A., assignor to self and George F. Bolles, Minneapolis, Minn. Pencil-holder	Oct. 25, 1870
	Eaton, Edwin A. (See Hamilton, L. B., assignor.)	
	Eaton, G. S., and P. R. Walsh. (See Walsh & Eaton)	
	Eaton, George F. (See Ricard, Hubert, assignor.)	
103,034	Eaton, Ithamar F., assignor to self and William C. Dunham, Boston, Mass. Composition to prevent the slipping of machine-belts	May 17, 1870
102,101	Eaton, Norman, Woburn, Mass. Lawn-mower	April 19, 1870
98,938	Eaton, N. J., Montana, Iowa. Butter-excavator	Jan. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,418	Eaton, Richard, assignor to James M. Foss, England. Adjustment of wheels on the axles of railway-cars.	Feb. 1, 1870
106,144	Eaton, William, Norwich, N. Y. Washing-machine.	Aug. 9, 1870
101,445	Eaton, William, Bonn Ainsworth, and George W. Scott, Blackstone, Mass. Hydraulic engine.	April 5, 1870
105,659	Eau Claire Lumber Company. (See Pond, Levi W., assignor.)... (Two cases.)	
107,236	Ebaugh, David C., Charleston, S. C. Machine for crushing mineral and other hard substances.	July 26, 1870
107,466	Eberhard, William, assignor to self and J. P. Alexander, Akron, Ohio. Carpet-rag cutter.	Sept. 13, 1870
99,864	Eberly, John A., assignor to self and Abraham Godshalk, Reamstown, Pa. Meat-chopper.	Sept. 20, 1870
102,926	Ebert, Octavius A., Baltimore, Md. Attachment for hot-air registers.	Feb. 15, 1870
109,811	Ebert, William C., Hannibal, Mo. Lamp-extinguisher.	May 10, 1870
105,660	Eberts, Herman F., et al. (See Howell, Daniel Y., assignor.)	
98,478	Eberts, Herman F., assignor to self, Daniel Y. Howell, and Thomas S. Sprague, Detroit, Mich. Refrigerator.	Dec. 6, 1870
105,441	Eby, S. J., et al. (See Hand, Benjamin R., assignor.)	
109,502	Eccard, Adolf, Washington, D. C. Hinge for blinds.	July 19, 1870
105,660	Eccles, Samuel, Philadelphia, Pa. Winding-machine.	Nov. 22, 1870
98,478	Eccles, William M., St. Louis, Mo. Device for preventing plows from choking.	July 26, 1870
4,470	Eccleston, Charles H., Oxford, N. Y. Automatic vaccinating instrument. (Ante-dated Dec. 24, 1869).	Jan. 4, 1870
101,446	Same..... Face-plate of a lock. (Design).	Nov. 15, 1870
104,946	Eck, J. L., assignor to self and S. S. Schmehl, Kutztown, Pa. Ruffling-attachment for sewing-machines.	April 5, 1870
108,340	Eck, Samuel T., Tancytown, Md. Grinding-mill.	July 5, 1870
99,419	Eckert, Augustus, Trenton, Ohio. Mechanical movement.	Oct. 18, 1870
101,840	Eckert, George M., St. Louis, Mo. Cooking-stove.	Feb. 1, 1870
99,766	Eckert, William H. (See Armstrong, George, assignor.)	
103,855	Eckford, Peter and James, Cincinnati, Ohio. Piston-rod packing.	April 12, 1870
4,347	Eckhart, Charles, and Edwin F. Lenox. (See Lenox & Eckhart.)	
99,766	Eckhoff, John De Vries. (See De La Mar, Joseph, assignor.)	
103,855	Eddelman, Daniel and Amos, Madison, Ind. Hay-drag.	Feb. 15, 1870
4,347	Eddleman, James P., Pilot Point, Texas. Combined sower, planter, cultivator, scraper, and gang-plow.	June 7, 1870
104,127	Eddy, George W., Waterford, N. Y. Stove-plate. (Design).	Sept. 13, 1870
109,400	Eddy, J. D. (See Stuart, Addison, assignor.)	
103,035	Edelin, William, et al. (See Russell, James F., assignor.)	
3,820	Edgar, James. (See Miller, William, assignor) (Reissue.)	
101,841	Edgerton, Philip, Rutland, Vt. Churn-dasher.	June 14, 1870
103,035	Edgerton, Daniel D., Ava, N. Y. Milk-can fastener.	Nov. 22, 1870
3,820	Edison, Thomas A., New York, N. Y. Electro-motor escapement.	May 17, 1870
4,166	Edison, Thomas A., assignor through mesne assignments to the Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph. (Reissue.)	Feb. 1, 1870
103,999	Same..... Newark, N. J. Printing-telegraph. (Reissue.)	Oct. 25, 1870
101,841	Edison, Thomas A., and Frank L. Pope. (See Pope & Edison).... (Two cases.)	
101,842	Edler, F. A., and Eli L. Nichols. (See Nichols & Edler).... (Design.)	
103,999	Edmund, Henry V., Norwich, Conn. Manufacture of frosted plush paper, &c.	June 7, 1870
101,841	Edmonston, C. A. (See Jones, William F., assignor.)	
101,842	Edson, Jacob, Boston, Mass. Hose-coupling.	April 12, 1870
103,856	Same..... Mold for casting pipe.	April 12, 1870
104,437	Same..... Ventilator or cowl.	June 7, 1870
106,345	Same..... Vise.	June 21, 1870
107,467	Edson, Jarvis B., Brooklyn, N. Y. Recording pressure-gauge.	Aug. 16, 1870
107,347	Edstrom, E. P., jr., et al. (See Flynn, William H., assignor.)	
104,289	Edwards, Clements R., Bowling Green, Ky. Seed-planter.	Sept. 20, 1870
100,874	Edwards, Eben, assignor to self and Ebenezer Sanborn, South Boston, Mass. Combined furnace and range.	Sept. 13, 1870
105,561	Edwards, Edward, England. Pump. (Patented in England Aug. 6, 1868).	June 14, 1870
100,018	Edwards, Joseph B., North Greenbush, N. Y. Still for distilling hydrocarbons.	Mar. 15, 1870
3,880	Edwards, Nelson, Jericho, Vt. Carpet-underlie.	July 26, 1870
107,016	Efner, Henry A., and Charles Boynton, Marshall, Mich. Switch signal.	Feb. 22, 1870
107,888	Egery, T. N. (See Richardson, Simon H., assignor.)	
104,128	EGge, Frederick, assignor to F. W. Smith, jr., George W. Bassett, and S. R. Wilmot, Bridgeport, Conn. Padlock. (Reissue.)	Mar. 15, 1870
100,129	Egge, Frederick, and Robert W. Churchill, Bridgeport, Conn. Implement for cutting thread.	Sept. 6, 1870
110,219	Eggert, John, New York, N. Y. Velocipede.	Oct. 4, 1870
106,798	Eggleston, Asa, Fall River, Mass. Faucet.	June 14, 1870
105,926	Eggleston, Charles H., Marshall, Mich. Gate.	Feb. 22, 1870
98,791	Eggo, James, Jersey City, N. J. Shell-fuse.	Dec. 20, 1870
3,791	Egli, Benedic, and Timothy Coffield. (See Coffield & Egli.)	
104,717	Egnor, Charles, Catskill, N. Y. Trap for lowering ice.	Aug. 30, 1870
99,544	Ehlers, William F., Pottsville, Pa. Wheel-hub.	Aug. 2, 1870
107,888	Ehrhardt, Ferdinand, assignor to Paul Sipos, Washington, D. C. Kitchen-table.	Jan. 11, 1870
104,717	Eiberweiser, John, assignor to John S. Hall, J. A. Moore, H. Burkhardt, and Abel W. Hall, Cincinnati, Ohio. Cider-mill. (Reissue.)	Jan. 11, 1870
99,544	Eich, Stephen, East Toledo, Ohio. Window-blind.	June 28, 1870
99,544	Eickemeyer, R., Yonkers, N. Y. Machine for embossing hats.	Feb. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,447	Eickemeyer, R., Yonkers, N. Y. Lathe for turning ovals.....	April 5, 1870
101,719	Same.....Harvester.....	April 12, 1870
3,916	Eickemeyer, Rudolph, assignor to John T. Waring, Yonkers, N. Y. Felting-machine.....(Reissue).....	April 12, 1870
108,121	Same.....Machine for felting.....	Oct. 11, 1870
108,122	Eilers, Henry, Cincinnati, Ohio. Adjustable pillow.....	Oct. 11, 1870
3,952	Eisle, Charles, Newark, N. J. Harness-mounting.....(Design).....	April 5, 1870
102,667	Eisenhower, William A., Friedensburgh, Pa. Sash-holder.....	May 3, 1870
104,840	Eiswald, Theodor G., Providence, R. I. Breastpin.....	June 28, 1870
106,474	Same.....Medical compound for the cure of gravel.....	Aug. 16, 1870
109,306	Same.....Sad-iron.....	Nov. 15, 1870
103,589	Elbel, Gustavus, Pittsburgh, Pa. Revolving back-band-hook for harness-saddles.....	May 31, 1870
107,601	Elder, Alexander J., Chicago, Ill. Electro-magnetic railroad signal apparatus.....	Sept. 20, 1870
99,545	Elder, Daniel M., Monmouth, Ill. Railway-car brake.....	Feb. 8, 1870
	Elder, F. W. & Co. (See Randall, John T., assignor.)	
	Elder, L. R., and J. S. Hobbs. (See Hobbs & Elder.)	
99,420	Elder, R. G., New York, N. Y. Handle for children's carriages.....	Feb. 1, 1870
99,421	Same.....Four-wheeled propeller.....	Feb. 1, 1870
102,927	Same.....Children's carriage.....	May 10, 1870
110,557	Elder, Wilson, Mill Hall, Pa. Fastening carriage-wheels.....	Dec. 27, 1870
100,137	Eldredge, D. W., Boston, Mass. Watch-regulator.....	Feb. 22, 1870
	Eldredge, Daniel W., and John Logan. (See Logan & Eldredge.)	
101,988	Eldredge, John V. D., Detroit, Mich. Sewing-machine.....	April 19, 1870
107,889	Same.....Hemmer for sewing-machines.....	Oct. 4, 1870
99,865	Eldridge, David, Salem, Ohio. Shifting buggy-top.....	Feb. 15, 1870
101,597	Eldridge, George W., South Chatham, Mass. Fire-kindling.....	April 5, 1870
103,163	Same.....same.....	May 17, 1870
109,019	Eldridge, H. K., Cambridge, Mass. Jib-hank for vessels.....	Feb. 22, 1870
102,517	Eliason, Ola L., Salt Lake City, Utah Ter. Main-spring barrel attachment for watches.....	May 3, 1870
102,928	Elicker, Daniel, Mulberry, Pa. Washing-machine.....	May 10, 1870
100,020	Elkins, Thomas, Albany, N. Y. Dining and ironing table and quilting-frame.....	Feb. 22, 1880
100,131	Elkington, James Ballen, England. Manufacture of copper, and in separating other metals therefrom. (Patented in England Nov. 3, 1865).....	Feb. 22, 1870
	Elkinton, Joseph R. (See Flanigin, Henry M., assignor.)	
	Ellenbogen, M., and Julius Wilcke. (See Wilcke & Ellenbogen, assignors.)	
	Ellerby, John, and John A. Spooner. (See Spooner & Ellerby.)	
103,773	Ellingwood, Joshua, Owensboro', Ky. Fermenting alcoholic liquor from grain.....	Nov. 1, 1870
4,383	Elliot, Alfred L., Boston, Mass. Cellar-box.....(Design).....	Oct. 4, 1870
104,718	Elliot, George, St. Louis, Mo. End-fastener for car-springs.....	June 28, 1870
103,894	Elliot, John W., Toronto, Canada. Railway snow-shovel.....	Nov. 1, 1870
102,383	Elliot, William H., New York, N. Y. Machine for drilling rock.....	April 26, 1870
110,024	Same.....Breech-loading fire-arm.....	Dec. 13, 1870
102,518	Elliott, Arthur H., Albion, Mich. Churn.....	May 3, 1870
	Elliott, A. J. (See Morrison, James A., assignor.)	
101,241	Elliott, Asahel N., Barre, Mass. Material for chair-seats.....	Mar. 29, 1870
	Elliott, Clark. (See Hiller, John R., assignor.)	
105,927	Elliott, Ephraim K., Cuyahoga Falls, Ohio, and Uri J. Baxter, Washington, D. C., Clothes-line fastener.....	Aug. 2, 1870
98,857	Elliott, George W., Rocheport, Mo. Saddle-bag.....	Jan. 18, 1870
108,988	Elliott, James M., Winnsborough, S. C. Seed-planter.....	Nov. 8, 1870
110,347	Elliott, John T., Grand Rapids, Mich. Clothes-drier.....	Dec. 20, 1870
107,017	Elliott, Josiah S., assignor to Union Stone Company, Boston, Mass. Brick-machine.....	Sept. 6, 1870
110,023	Same.....Machine for mixing the material to form artificial stone, &c.....	Dec. 13, 1870
106,346	Elliott, Lewis, jr., and George H. Fowler, assignors to L. Candee & Co., New Haven, Conn. India-rubber shoe.....	Aug. 16, 1870
101,242	Elliott, William B., Corning, N. Y. Apparatus for setting up barrels.....	Mar. 29, 1870
103,313	Elliott, William H., Boston, Mass. Dumb-waiter.....	May 24, 1870
105,321	Elliott, William H., Beardstown, Ill. Seat for vehicles.....	July 12, 1870
101,843	Elliott, William P., assignor to self and Leverett F. Goodyear, New Haven, Conn. Caster for sewing-machines.....	April 12, 1870
101,844	Same.....same.....	April 12, 1870
103,727	Elliott, William T., assignor of one-half interest to William H. Speers, Metamora, Ill. Ratchet-power.....	May 31, 1870
108,465	Ellis, Augustin, and Oliver Albertson, Salem, Ind. Hoe.....	Oct. 18, 1870
101,845	Ellis, Darwin, Whitestone, N. Y. Magazine fire-arm.....	April 12, 1870
106,676	Ellis, Edward J., Lewiston, Me. Machine for varnishing and dressing loom-harness.....	Aug. 23, 1870
106,677	Ellis, George M., Hunteartown, Ind. Harrow.....	Aug. 23, 1870
4,058	Ellis, Joel A. H., Springfield, Vt. Toy-block.....(Design).....	May 24, 1870
108,574	Same.....Combined steam and gas engine.....	Oct. 25, 1870
104,438	Ellis, John H., Peoria, Ill. Machine for canning fruit.....	June 21, 1870
107,018	Ellis, Minot, Greenfield, Mass. Hand-rake.....	Sept. 6, 1870
99,422	Ellis, Seth C., New York, N. Y. Journal-box.....	Feb. 1, 1870
99,866	Same.....Machine for laying out doors and sash.....	Feb. 15, 1870
100,610	Same.....Jersey City, N. J. Machine for making sash.....	Mar. 8, 1870
104,129	Ellis, Theodore W., Macon, Ga. Liquid-measure.....	June 14, 1870
99,658	Ellis, Thomas and William A., Philadelphia, Pa. Brick-machine.....	Feb. 8, 1870
98,676	Ellis, Zabina, Philadelphia, Pa. Anchor for securing cores in molds.....	Jan. 11, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,799	Ellison, Abram, Marysville, Cal. Gang-plow.....	Aug. 30, 1870
100,739	Ellison, Thomas, Abington, Ill. Gate.....	Mar. 15, 1870
110,920	Ellison, Thomas C., Albany, N. Y. Extension-table.....	Dec. 20, 1870
100,385	Ells, Benjamin F., Dayton, Ohio. Spring bed-bottom.....	Mar. 1, 1870
105,557	Ells, Edgar S. and Sidney W. Park. (See Park & Ells)..... (Extension.)	
	Ells, Josiah W., assignor to self and S. M. Kier, Pittsburgh, Pa. Apparatus for generating and burning gas in metallurgic furnaces. (Ante-dated July 6, 1870).....	July 19, 1870
105,558	Same..... Gas and air-heating apparatus for metallurgic furnaces. (Ante-dated July 6, 1870).....	July 19, 1870
4,442	Ellsworth, Edward A., Washington, D. C. Group of tools, machinery, &c. (Design).....	Oct. 25, 1870
106,569	Elmer, William, New York, N. Y. Manufacture of inflammable gases for fuel, &c. (Antedated Aug. 12, 1870).....	Aug. 23, 1870
109,885	Elmer, William H., Berlin, Wis. Water-wheel. (Antedated Nov. 26, 1870).....	Dec. 6, 1870
	Elmore, Riverious P. (See French, John A., assignor.)	
108,989	Elson, James, Northampton, Mass. Lunch-box.....	Nov. 8, 1870
100,511	Elson, Julius, Boston, Mass. Watch-regulator.....	Mar. 8, 1870
105,928	Elston, James, Anthony Elston Station, Mo. Sewing-machine.....	Aug. 2, 1870
102,519	Elton, William H., Baltimore, Md. Coffee-cleaning machine.....	May 3, 1870
104,290	Elward, John H., Polo, Ill. Harvester.....	June 14, 1870
3,942	Elwell, Henry H., South Norwalk, Conn. Folding-door key..... (Design).....	Mar. 29, 1870
105,322	Same..... Key.....	July 12, 1870
108,466	Same..... New Haven, Conn. Key for doors, &c.....	Oct. 18, 1870
4,429	Same..... Keeper for door-locks..... (Design).....	Oct. 25, 1870
4,430	Same..... Face-plate for locks..... (Design).....	Oct. 25, 1870
4,431	Same..... same..... (Design).....	Oct. 25, 1870
4,432	Same..... Keeper for door-locks..... (Design).....	Oct. 25, 1870
3,909	Elwell, Henry H., assignor to the Norwalk Lock Company, South Norwalk, Conn. Reversible knob-latch..... (Reissue).....	April 5, 1870
4,126	Elwell, Henry H., assignor through mesne assignments to the Russell & Erwin Manufacturing Company, South Norwalk, Conn. Reversible knob-latch. (Re-issue).....	Sept. 20, 1870
102,382	Ely, Alfred B., Newton, Mass. Refrigerator and cooling apparatus.....	April 26, 1870
	Same..... (See Hall, Luther, assignor.)	
105,058	Ely, A. B., and E. C. Clay; said Clay assignor to said Ely, Newton, Mass. Breech-loading fire-arm. (Antedated Jan. 5, 1870).....	July 5, 1870
102,668	Ely, George, New York, N. Y. Piano-forte.....	May 3, 1870
100,875	Ely, Stephen D., Millstone, N. J. Mode of lubricating the wheels in tread-powers.....	Mar. 15, 1870
102,669	Ely, William, New York, N. Y. Bottle-stepper.....	May 3, 1870
	Ely, William N., trustee. (See Symmes, John Cleves, assignor)..... (Reissue)	
108,244	Embrey, Charles, Williamsport, Md. Bee-hive.....	Oct. 11, 1870
105,929	Emerson, Enos, Smithport, Pa. Turbine water-wheel.....	Aug. 2, 1870
99,546	Emerson, George D., Calumet, Mich. Velocipede.....	Feb. 8, 1870
101,846	Emerson, George D., Calumet, Mich. Friction-clutch for engaging and disengaging gearing.....	April 12, 1870
108,123	Same..... Apparatus for bending railroad-rails.....	Oct. 11, 1870
98,479	Emerson, George W., Chicago, Ill. Paper-clip.....	Jan. 4, 1870
102,237	Emerson, George W., assignor to John R. Barrett, Chicago, Ill. Paper-file. (Antedated April 23, 1870).....	April 26, 1870
102,520	Emerson, James E., Trenton, N. J. Saw.....	May 3, 1870
108,990	Same..... Blank for saw-teeth.....	Nov. 8, 1870
108,694	Emerson, John W., Milbury, Mass. Hollow wick lamp-burner.....	Oct. 25, 1870
99,301	Emerson, S. F., Seville, Ohio. Meat and vegetable chopper.....	Feb. 1, 1870
	Emerson, Samuel P., and Amos White. (See Cole, J. H., assignor.)	
	Emerson, William P., et al. (See Kerigan, Michael J., assignor.)	
104,439	Emery, Albert H., and Gabriel Leverich, New York, N. Y. Apparatus for towing canal-boats.....	June 21, 1870
	Same..... (See Leverich & Emery.)	
100,512	Emery, Charles E., Brooklyn, N. Y. Steam and water separator for steam-engines.....	Mar. 8, 1870
	Emery, Charles E., and Sidney F. Shelbourne. (See Shelbourne & Emery.)	
105,442	Emery, Harriet Godfrey, and Margaret Cate Fuller, Boston, Mass. Collar.....	July 19, 1870
3,838	Emery, John J., assignor of part interest to E. R. Cheney, Owl's Head, Me. Surge-reliever..... (Reissue).....	Feb. 15, 1870
	Emery, John J., and Ethan R. Cheney. (See Cheney & Emery)..... (Two cases.)	
102,929	Emery, Titus S., Philadelphia, Pa. Brick-machine.....	May 10, 1870
106,678	Emmerich, John M., New Haven, Conn. Hub for carriage-wheels.....	Aug. 23, 1870
108,575	Emmert, John, Dunleith, Ill. Clothes-drier.....	Oct. 25, 1870
	Emmons, Lucius H., and Ephraim Barks. (See Barks & Emmons.)	
	Emmons, Theodore P. and Lester S. (See Mickel, William, assignor.)	
3,937	Emmons, William, Sandwich, Ill. Horse hay-rake..... (Reissue).....	April 26, 1870
	Empire Transportation Company. (See Potts & Lamason, assignors.)	
102,238	Emrick, David S., Fayette, N. Y. Horse hay-rake.....	April 26, 1870
103,728	Endemann, Hermann, New York, N. Y. Preparing and preserving meat.....	May 31, 1870
101,598	Engels, Robert, Philadelphia, Pa. Ticket-punch.....	April 5, 1870
104,000	Englaender, Joseph, assignor to self and Eugene Lungstras, Sedalia, Mo. Horse-collar.....	June 7, 1870
105,443	Same..... same.....	July 19, 1870
101,243	England, Elihu, Mossy Creek, Tenn. Tanning.....	Mar. 29, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,719	England, Elihu, Mossy Creek, Tenn. Compound for stuffing and tanning hides.	June 28, 1870
98,677	Engle, S. D., Hazleton, Pa. Dust-ring for watch-frames	Jan. 11, 1870
100,513	English, Francis M., Evansville, Ind. Washing-machine	Mar. 8, 1870
	English, Richard, and James D. Ackley. (See Ackley & English.)	
4,502	English, Richard W., Buffalo, N. Y. Broom.....(Design).....	Dec. 13, 1870
98,939	Ennes, Homer L., Birmingham, Ohio. Washing-machine	Jan. 18, 1870
109,307	Same.....Mop-wringer.....	Nov. 15, 1870
104,291	Ennett, Thomas, Rockford, Ill. Lime-kiln.....	June 14, 1870
	Ennis, George Movier, and Ansel Granville Baker. (See Baker & Ennis.)	
108,341	Ennis, James, Columbus, Ohio. Wheelbarrow.....	Oct. 18, 1870
99,174	Ennis, William, Philadelphia, Pa. Brick-kiln.....	Jan. 25, 1870
106,347	Same.....Manufacture of wrought and puddled iron.....	Aug. 1, 1870
104,397	Enright, John, assignor to self, William Wall, and Thomas Enright, Louisville, Ky. Core-bar for casting pipe.....	June 14, 1870
106,924	Ensign, Charles A., Naugatuck, Conn. Apparatus for the manufacture of elastic fabrics.....	Aug. 30, 1870
109,725	Same.....Machine for cutting sheets of India-rubber.....	Nov. 29, 1870
109,726	Same.....Machine for joining irregular seams in India-rubber work.....	Nov. 29, 1870
98,576	Ensigner, Jacob, and Lewis Fertig, Dauphin, Pa. Bread and meat slicer.....	Jan. 4, 1870
104,947	Eusminger, Henry H., Buffalo, N. Y. Hay-unloader.....	July 5, 1870
108,467	Entwistle, James, assignor to self and John Parkinson, Conshohocken, Pa. Self-acting mule, &c., for spinning.....	Oct. 18, 1870
102,789	Eppes, Andrew F., Stony Creek, Va. Plow.....	May 10, 1870
108,468	Erdley, Robert, Selin's Grove, Pa. Corn-planter.....	Oct. 18, 1870
98,940	Ericsson, John, New York, N. Y. Capstan.....	Jan. 18, 1870
100,514	Same.....Gun-carriage.....	Mar. 8, 1870
106,348	Same.....Fan-blower.....	Aug. 16, 1870
106,800	Same.....Marine-engine.....	Aug. 30, 1870
108,857	Ernst, Philipp M., assignor to self and Ernst Schmidt, New York, N. Y. Insole for boots and shoes.....	June 7, 1870
101,113	Erpelding, John, Chicago, Ill. Lunch-box.....	Mar. 22, 1870
	Erpelding, L., et al. (See McCormick, Baker, and Erpelding, assignors.)	
107,237	Erskine, Massena B., Racine, Wis. Mounted horse-power.....	Sept. 13, 1870
100,275	Erwin, William P., and Thomas A. Dugdale, Richmond, Ind. School-desk.....	Mar. 1, 1870
100,276	Same.....School-desk and seat.....	Mar. 1, 1870
100,277	Erwood, John C., Vernon, Ind. Corn-cultivator.....	Mar. 1, 1870
109,812	Eshleman, Abraham, Martinsville, Pa. Cultivator.....	Dec. 6, 1870
106,039	Eshleman, Jefferson, assignor to self and Levi E. Miller, Canaan Centre, Ohio. Wheel-cultivator.....	Aug. 2, 1870
	Eshleman, Samuel. (See Schweigert, George D., assignor.)	
108,774	Eskrett, Cyrus, and Henry Searle, England. Oil-cake envelope.....	Nov. 1, 1870
102,238	Essex, James J., Newport, R. I. Elastic nasal plug.....	Sept. 13, 1870
101,244	Estabrooks, Charles, Calais, Me. Culinary vessel.....	Mar. 29, 1870
98,678	Estell, Samuel F., Richmond, Ind. Programme-clock.....	Jan. 11, 1870
	Estep, David P., Pittsburgh, Pa. Making ax-polls.....(Extension).....	Sept. 30, 1870
3,955	Esterly, George, assignor to George F. Seiberling, White Water, Mich. Harvester.....	May 3, 1870
	Same.....same.....(Division A, reissue).....	May 3, 1870
3,956	Same.....same.....(Division B, reissue).....	May 3, 1870
3,957	Same.....same.....(Division C, reissue).....	May 3, 1870
108,576	Estes, Philip, Leavenworth, Kans. Steam-engine.....	Oct. 25, 1870
102,521	Estes, William J., Penn Township, Ill. Steam-boiler for cooking food for stock.....	May 3, 1870
108,991	Estey, William S., and Isaac S. Clough, Brooklyn, N. Y. Ash-sifter.....	Nov. 8, 1870
	Eubank, Stephen G., and James T. Dorson. (See Dorson & Eubank.)	
	Eunson, Robert G., and John Myers. (See Myers & Eunson).....(Disclaimer.)	
109,813	Evans, Benjamin Franklin, Newburyport, Mass. Barrel safety-valve or vent.....	Dec. 6, 1870
106,040	Evans, Edward, Philadelphia, Pa. Portable cooking-stove.....	Aug. 2, 1870
102,930	Evans, Elijah, Sparta, Ohio. Stove-leg.....	May 10, 1870
	Evans, Evan T. (See Black, Henry W., assignor.)	
106,349	Evans, George M., Pittsburgh, Pa. Bench-vise.....	Aug. 16, 1870
102,522	Evans, Hampton W., Philadelphia, Pa. Sectional steam-generator.....	May 3, 1870
	Evans, Isaac I. (See Hill, Daniel, assignor.)	
103,589	Evans, James, Philadelphia, Pa. Brick-cart.....	May 31, 1870
102,102	Evans, James C., Delaware, Ohio. Road-scraper.....	April 19, 1870
103,590	Evans, John, New Haven, Conn. Attaching door-knobs to their spindles.....	May 31, 1870
104,292	Same.....Die for forging ears for carriage-spring heads.....	June 14, 1870
104,440	Same.....same.....	June 21, 1870
108,577	Evans, John G., Orville, Ohio. Grain-separator.....	Oct. 25, 1870
108,124	Evans, Lewis A., assignor to self and W. E. Boatwright, Chester, Pa. Car-coupling.....	Oct. 11, 1870
109,602	Evans, Louis, Pittsburgh, Pa. Castor and spoon-holder combined.....	Nov. 29, 1870
107,890	Evans, Philip Charles, England, and Henry James Hogg King, Scotland. Weighing-attachment for carding-machine feeders.....	Oct. 4, 1870
3,806	Evans, Stockton H., and Ludwig Gentsch, assignors through mesne assignments to Harshaw Scott, New York, N. Y. Skate.....(Reissue).....	Jan. 25, 1870
98,679	Evans, Thomas, Newark, N. J. Wash-boiler.....	Jan. 11, 1870
98,941	Evans, Thomas R., Blacksburg, Va. Washing-machine.....	Jan. 18, 1870
101,599	Same.....Churn.....	April 5, 1870
103,164	Evans, Thomas R., Philadelphia, Pa. Shoe.....	May 17, 1870
	Evans, Walter W., and Norman W. Wheeler. (See Wheeler & Evans.)	
109,338	Evans, Washington, Ontario, Ohio. Stone-truck.....	Nov. 15, 1870
99,867	Evans, William, Eureka, Wis. Spring-brace for carriages.....	Feb. 15, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,013	Evans, William, New Haven, Conn. Machine for milling carriage-spring heads.	Oct. 4, 1870
99,074	Evans, William, assignor to self and William Coleman, Pittsburgh, Pa. Clip for elliptic springs.	Jan. 25, 1870
102,790	Evans, William D., Philadelphia, Pa. Razor-strap.	May 10, 1870
100,515	Evans, William J., assignor to self and Charles Warner, Homer, Iowa. Railway-car coupling.	Mar. 8, 1870
100,132	Evarts, Harry H., Chicago, Ill. Construction of chairs.	Feb. 22, 1870
4,031	Same.....Dovetail.....(Design)	May 17, 1870
104,001	Same.....Dovetailing-machine.....(Design)	June 7, 1880
3,839	Everett, Horace, Philadelphia, Pa. Metal can.....(Design)	Feb. 8, 1870
101,847	Same.....Sheet-metal can.....(Design)	April 12, 1870
100,386	Everickx, C. J., France. Camp-bedstead.	Mar. 1, 1870
104,293	Everitt, Edwin Bronson, West Meriden, Conn. Animal-trap.	June 14, 1870
107,767	Everts, Henry A., Sedan Falls, Iowa. Removable shoe-lining.	Sept. 27, 1870
100,740	Evinger, N., Sandford, Ind. Corn-husker.	Mar. 15, 1870
104,841	Ewing, James, New York, N. Y. Cork-presser.	June 28, 1870
100,741	Ewing, Joseph M., Hastings, Mich. Burglar-proof safe.	Mar. 15, 1870
	Excelsior Needle Company. (See Fowler, Francis, assignor.)	
99,868	Eynon, David, Richmond, Va. Machine for rolling railroad-chairs. (Antedated Feb. 7, 1870)	Feb. 15, 1870
99,869	Same.....Machine for rolling railroad-chairs. (Antedated Feb. 7, 1870)	Feb. 15, 1870
102,670	Eynon, David, assignor to Tredegar Company, Richmond, Va. Roughing-rolls.	May 3, 1870
107,602	Same.....Art of manufacturing spikes.	Sept. 20, 1870
104,130	Eyster, Christian S., Denver, Col. Ter. Separating and refining metals.	June 14, 1870
	Eyth, M., and Oscar De Mesnil. (See De Mesnil & Eyth.)	
	Faber, Eberhard. (See Warth, Hufeland & Brown, assignors.)	
99,415	Faber du Faur, Adolph, New York, N. Y. Furnace for melting and refining iron and other metals.	Feb. 1, 1870
107,603	Same.....Exhaust-nozzle.	Sept. 20, 1870
108,695	Faber du Faur, Adolph, assignor to self and Edward Balbach, jr., Newark, N. J. Retort-furnace.	Oct. 25, 1870
103,591	Fabre, Francis, France. Manufacture of bricks, tiles, &c., from slag.	May 31, 1870
101,114	Faessler, John, Bloomington, Ill. Wrench.	Mar. 22, 1870
	Fagan, John, and William Velte. (See Velte & Fagan.)	
104,842	Fagan, Michel G., assignor to self and Albert C. Corse, Troy, N. Y. Hot-air furnace.	June 28, 1870
104,002	Fahnestock, Thomas C., Cincinnati, Ohio. Paper-file.	June 7, 1870
110,025	Fahrney, Peter, Chicago, Ill. Medical compound, and apparatus for making the same.	Dec. 13, 1870
103,729	Fahrney, William H., assignor to self and John Donaldson, Rockford, Ill. Door-stop.	May 31, 1870
110,026	Same.....same.	Dec. 13, 1870
	Fairbank, N. K. (See Gilbert, William, assignor.)	
	Fairbanks, Franklin. (See Paddock, Harvlin, assignor.)	
107,239	Fairbanks, Henry, St. Johnsbury, Vt. Self-registering weighing-scale.	Sept. 13, 1870
107,240	Same.....Recording weighing-scale.	Sept. 13, 1870
102,791	Fairbanks, Thaddeus, St. Johnsbury, Vt. Weighing-scale.	May 10, 1870
102,523	Fairchild, Francis Theodore, Sheboygan, Wis. Churn.	May 3, 1870
101,448	Fairfield, George A., Hartford, Conn. Knife, nut-cracker, and picker.	April 5, 1870
107,019	Fairfield, George A., Glenwood, Mo. Feeding-mechanism for sewing-machines.	Sept. 6, 1870
110,126	Fairley, James and Alfred, England. Hoe.	Dec. 13, 1870
99,175	Fake, Henry, assignor to self and Charles A. Todd, Williamsburgh, N. Y. Rectifying whisky during distillation.	Jan. 25, 1870
105,788	Fake, Henry, assignor to self and Charles A. Todd, Brooklyn, N. Y. Rectifying whisky, &c.	July 26, 1870
99,870	Falardo, Peter, Newark, N. J., and George H. Snow, New Haven, Conn. Hand clothes-washer.	Feb. 15, 1870
107,020	Fales, Edward, Glenwood, Mo. Fence.	Sept. 6, 1870
101,600	Faloon, Matthew, Bloomington, Ill. Spring bed-bottom.	April 5, 1870
99,871	Fanning, D. H., Worcester, Mass. Skeleton-corsets.	Feb. 15, 1870
100,278	Same.....Corset.....(Design)	Mar. 1, 1840
4,366	Same.....same.....(Design)	Sept. 27, 1870
4,367	Same.....same.....(Design)	Sept. 27, 1870
109,309	Same.....Skirt-supporting hook for corsets.	Nov. 15, 1870
101,601	Fanning, F., Atchison, Kans. Wire-tightener for wire-fence.	April 5, 1870
	Fanning, John, and Julian Allen. (See Allen & Fanning, assignors.)	
101,602	Fanyou, Joseph, Bridgeport, Conn. Galvanic shoe-sole.	April 5, 1870
110,447	Fargo, Joseph E., Lake Mills, Wis. Combined broadcast seeder and cultivator.	Dec. 27, 1870
	Paris, Uriah, and Abraham Miller. (See Miller & Paris.)	
107,768	Paris, Uriah, and Abraham Miller, Red Rock, Iowa. Grindstone, or tool-sharpener.	Sept. 27, 1870
108,578	Farjeon, Israel, New York, N. Y., and William H. Horton, Jersey City, N. J. Jewlry-pin.	Oct. 25, 1870
106,041	Farjon, Louis Alexander, Belgium. Pipe-coupling.	Aug. 2, 1870
103,730	Farmer, David J., Wheeling, West Va. Machine for making nails.	May 31, 1870
103,895	Same.....Machine for cutting nails.	Nov. 1, 1870
102,931	Farmer, George Penrice, Philadelphia, Pa. Machine for folding or winding and measuring cords, &c.	May 10, 1870
106,925	Same.....Combined spool and needle-threader.	Aug. 30, 1870
102,792	Farmer, John, Rockport, Ohio. Washing-machine.	May 10, 1870
109,603	Farmer, Moses G., Salem, Mass. Thermo-electric battery.	Nov. 29, 1870
104,103	Farnsworth, Enoch, Sabbath Rest, Pa. Stump-extractor.	June 7, 1870
106,926	Same.....Stump-extractor.	Aug. 30, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,720	Farnsworth, Frank, Frankfort, Ill. Sulky-cultivator .....	April 12, 1870
106,145	Farnsworth, Loring, assignor to self and William H. Flinn, Nashua, N. H. Piano-forte .....	Aug. 9, 1870
104,004	Farquhar, Arthur B., York, Pa. Tailing-elevator for separators .....	June 7, 1870
102,671	Farquhar, Francis, Richmond, Ind. Agricultural boiler .....	May 3, 1870
99,659	Farr, Henry L., assignor to C. A. Greenleaf, J. L. Mothershead, and Edwin J. Peck, Indianapolis, Ind. Sectional fly-wheel .....	Feb. 8, 1870
106,146	Farra, Lorenzo D., and George H. Hall. (See Hall & Farra.) Farrah, William, Des Moines, Iowa. Automatic reel for clothes-lines .....	Aug. 9, 1870
98,480	Farrar, Alonzo, Longwood, Mass. Cast-iron pavement .....	Jan. 4, 1870
100,876	Same..... Brookline, Mass. Process of treating acid residuum from oil refineries .....	Mar. 15, 1870
100,877	Same..... Composition to be used for printing and painting on surfaces .....	Mar. 15, 1870
109,310	Farrar, John N., Pepperell, Mass. Railway-car wheel .....	Nov. 15, 1870
99,547	Farrar, John N., assignor to self and George E. Brown, Pepperell, Mass. Railway-car wheel .....	Feb. 8, 1870
108,342	Farrar, John N., and Jacob Stone, Pepperell, Mass. Railway-track .....	Oct. 18, 1870
102,793	Farrar, Oliver W. (See Loftus, Robert W., assignor.) Farrel, John, New York, N. Y. Bolt for safes .....	May 10, 1870
107,021	Same..... Burglar-proof safe .....	Sept. 6, 1870
107,022	Same..... Filling for fire-proof safes .....	Sept. 6, 1870
107,023	Same..... Mechanism for opening and closing safe-doors .....	Sept. 6, 1870
101,245	Farrel, John, and Jacob Weimar, New York, N. Y. Safe .....	Mar. 29, 1870
104,720	Farrington, George K., Alcatraz Island, Cal. Clothes-pin .....	June 28, 1870
99,872	Farrington, George K., assignor to self and Frederick and Victor Schulz, Alcatraz Island, Cal. Combination-padlock .....	Feb. 15, 1870
110,448	Farrington, George K., assignor to self, Lorenzo Hubbard, and C. W. M. Smith, Alcatraz Island, Cal. Device for sighting and firing ordnance .....	Dec. 27, 1870
101,246	Farrington, Joel, assignor to self and F. H. W. Gregg, Corry, Pa. Harvester-rake .....	Mar. 29, 1870
103,592	Farris, Francis, <i>et al.</i> (See Valentine, Jacob, <i>et al.</i> ) Farson, Enoch S., Philadelphia, Pa. Filter. (Antedated May 17, 1870) .....	May 31, 1870
98,858	Farson, William, Philadelphia, Pa. Sofa-bedstead .....	Jan. 18, 1870
98,942	Same..... Extension-table .....	Jan. 18, 1870
100,611	Fasig, Daniel, Rowsbury, Ohio. Combined hay-knife and pruning-hook .....	Mar. 8, 1870
102,524	Same..... West Salem, Ohio. Combined hay and pruning knife .....	May 3, 1870
100,878	Fassler, Jerome, Springfield, Ohio. Machine for manufacturing harvester-guard fingers .....	Mar. 15, 1870
105,323	Same..... Machine for sawing the slot in harvester-guard fingers .....	July 12, 1870
98,859	Fast, Edward G., Washington, D. C. Traveling sleeping-cushion .....	Jan. 18, 1870
107,348	Fatzinger, Alexander H., New York, N. Y. Spring-bed bottom .....	Sept. 13, 1870
4,471	Paul, George, assignor to Samuel F. Hilton, Boston, Mass. Box for putting up paper cuffs .....	Nov. 15, 1870
99,176	Faulkner, Edward H. (See Porter & Cross, assignors.) Faulkner, George S., Indianapolis, Ind. Harness-operating mechanism for looms .....	Jan. 25, 1870
99,177	Same..... same .....	Jan. 25, 1870
99,548	Faulkner, James J., McMinnville, Tenn. Turbine water-wheel .....	Feb. 8, 1870
109,401	Faulkner, Robert, Erie, Pa. Uterine supporter .....	Nov. 22, 1870
100,021	Faunce, John, Washington, D. C. Marine drag .....	Feb. 22, 1870
106,927	Faus, Joshua R., Espy, Pa. Apparatus for saturating fellics with oil .....	Aug. 30, 1870
103,314	Favor, M. Proctor, East Northwood, N. H. Latch .....	May 24, 1870
3,840	Fawcett, John J., and George A. Jenks. (See Jenks & Fawcett.) Fawcett, Samuel, and Henry R. Corkhill, Rochester, N. Y. Bread-toaster. (Design) .....	Feb. 8, 1870
98,577	Faxon, Edwin, <i>et al.</i> (See Kerigan, Michael J., assignor.) Faxon, Oren J. (See Murphy, John, assignor.) Fay, Edward, assignor to self and Louis C. Gury, Washington, D. C. Lock .....	Jan. 4, 1870
104,131	Fay, J. A., & Co. (See Richards, John, assignor.) Fay, Samuel B., New York, N. Y. Metallic hook for labels..... (Extension) .....	June 29, 1870
104,721	Fay, William H., Camden, N. J. Horse hay-rake .....	June 14, 1870
108,125	Fayerweather, John S. (See Wildman, Frederick M., assignor.) Fearis, George L., Connorsville, Ind. Liniment for treating neuralgia, &c.....	June 28, 1870
107,349	Feazel, Franklin, Lacon, Ill. Washing-machine .....	Oct. 11, 1870
108,896	Fee, William R., Cincinnati, Ohio. Cotton-seed huller .....	Sept. 13, 1870
108,245	Same..... same .....	Nov. 1, 1870
98,943	Feemster, John U. L., assignor to self and George W. Scott, Greencastle, Ind. Casting dental plates .....	Oct. 11, 1870
101,848	Fehrensen, Christian L., New York, N. Y. Screw-tap .....	Jan. 18, 1870
102,932	Feiock, Caspar, and Joseph F. Applegate. (See Applegate & Feiock.) Feiss, Julius, and Henry V. Hartz. (See Hartz & Feiss.) Felker, Philip, Providence, R. I. Brush-wheel .....	May 10, 1870
106,570	Fell, Thomas L., Glastonbury, Conn. Truss .....	Aug. 23, 1870
99,549	Fell, William Jenks, <i>et al.</i> (See Pepper, Daniel Webster, assignor.) Fellman, B. F., Sellersville, Pa. Washing-machine .....	Feb. 8, 1870
102,672	Same..... same .....	May 3, 1870
99,767	Fellows, Henry, Bloomington, Ind. Stirrup and spur for saddles. (Antedated Dec. 20, 1869.) .....	Feb. 15, 1870
105,789	Fellows, James H., Alba, Pa. Seat-fastening for carriages .....	July 26, 1870
103,858	Fellows, James H., and Alvin T. Dunbar. (See Dunbar & Fellows, assignors.) Fellows, John. (See Lyon, James W., assignor.) Felt, Luther W., Keene, N. H. Spinning-machine .....	June 7, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,525	Felt, Vanderlyn Howard, Kendall, N. Y. Harvester-rake.....	May 3, 1870
103,435	Felthousen, Barrent W., Milwaukee, Wis. Pump.....	May 24, 1870
110,449	Felthousen, Henry C., Buffalo, N. Y. Lens or glass for head-lights.....	Dec. 27, 1870
	Fenlin, Thomas F., and Albert H. Ladner. ( <i>See</i> Ladner & Fenlin.)	
	Fenner, Benjamin F., <i>et al.</i> ( <i>See</i> Tuell, Melzer, assignor.)	
	Fenner, Edward C., <i>et al.</i> ( <i>See</i> Horter, George, assignor) ..... (Two cases.)	
	Fenner, H. N. ( <i>See</i> Bradford, Horace C., assignor.)	
	Fenton, Albert, and William Avery. ( <i>See</i> Avery & Fenton)..... (Two cases.)	
	Fenton, Carnot F., <i>et al.</i> ( <i>See</i> Rigg, Hall & Fenton.)	
105,559	Fenton, Eben B., and Henry S. Penfield, Chicago, Ill. Spool-stand and show-case.....	July 19, 1870
102,794	Ferguson, Charles W., Jackson, Tenn. Brick-machine.....	May 10, 1870
101,449	Ferguson, Edmund M., Brady's Bend, Pa. Hot-blast oven or furnace.....	April 5, 1870
100,022	Ferguson, James H., Greenville, Ind. Collar and hames for harness.....	Feb. 22, 1870
107,891	Ferguson, James M., Summit, Miss. Stump-puller.....	Oct. 4, 1870
	Ferguson, Marcus E., and H. H. Heskett. ( <i>See</i> Heskett & Ferguson.)	
110,450	Ferguson, Richard, Louisville, Ky. Bushing for warp-beams.....	Dec. 27, 1870
107,892	Ferguson, Robert E., Chicago, Ill. Lumber-drier.....	Oct. 4, 1870
107,893	Same..... Clothes-wringer.....	Oct. 4, 1870
107,468	Ferguson, William, and James Anderson, New York, N. Y. Molding sash-weights.....	Sept. 20, 1870
107,894	Fernald, Edward S. M., Saco, Me. Knife-grinding machine.....	Oct. 4, 1870
104,843	Ferris, Gilbert H., Brooklyn, N. Y. Dry-dock.....	June 28, 1870
104,948	Ferris, Oscar C., and Frederick B. Miles, Philadelphia, Pa. Steam-hammer.....	July 5, 1870
107,241	Ferris, Smith, New York, N. Y. Device for molding plastic cornices.....	Sept. 13, 1870
107,024	Ferro, Mechele, Iuka, Miss. Medical compound for the cure of fever and ague.....	Sept. 6, 1870
106,679	Ferry, Thomas, Wilmington, Del. Carpet-duster.....	Aug. 23, 1870
	Fertig, Lewis, and Jacob Ensinger. ( <i>See</i> Ensinger & Fertig.)	
	Fessel, Herman E., and James O. Heyworth. ( <i>See</i> Heyworth & Fessel.)	
100,993	Fessenden, C. H., Candor, N. Y. Bedstead-fastening.....	Mar. 22, 1870
106,475	Fessler, Henry, and Robert V. Jones, assignors to selves and John D. Graber, Canton, Ohio. Wrench.....	Aug. 16, 1870
103,436	Fetherolf, Beneville L., Tamaqua, Pa. Tatting-shuttle.....	May 24, 1870
104,565	Same..... same.....	June 21, 1870
	Fetley, George, <i>et al.</i> ( <i>See</i> Wardrobe, Fisk, Curtis & Fetley.)	
98,681	Fetter, David F., New York, N. Y. Railway-car axle-coupling.....	Jan. 11, 1870
110,127	Same..... Bung-elevator.....	Dec. 13, 1870
103,315	Fetzer, John G., assignor to self and A. H. Fetzer, Brunswick, Mo. Corn-planter.....	May 24, 1870
102,103	Fenst, Sigmund, New York, N. Y. Lunch-valise.....	April 19, 1870
107,350	Feyh, Henry, New York, N. Y. Locking-bolt.....	Sept. 13, 1870
104,132	Ficht, Frank, Dyckesville, Wis. Wood-pavement.....	June 14, 1870
106,928	Ficker, Henry, assignor to self and David G. Brown, Dayton, Ohio. Sash-fastener.....	Aug. 30, 1870
102,239	Fickett, Albert, assignor to self, Isaac Butts, and Charles T. Moore, Rochester, N. Y. Apparatus for separating wood-fiber for paper, &c.....	April 26, 1870
103,246	Fickinger, Jacob, Kingsville, Ohio. Flour-bolt.....	Oct. 11, 1870
105,662	Fiedler, George J., Danby, Ill. Farm-gate.....	July 26, 1870
101,989	Field, Albert R., Central Falls, Ohio. Loom.....	April 19, 1870
106,571	Same..... Harness-operating mechanism for looms.....	Aug. 23, 1870
	Field, Alfred R. ( <i>See</i> Lewis, Joseph H., assignor.)	
	Field, Alonzo R., and Joseph B. Wakeman. ( <i>See</i> Wakeman & Field.)	
105,790	Field, B. F., Beloit, Wis. Manufacture of straw and other paper board.....	July 26, 1870
110,553	Field, Charles H., Providence, R. I. Carriage-button.....	Dec. 27, 1870
99,768	Field, D. E., assignor to self and Collett Leventhorpe, Leaksville, N. C. Corn-sheller.....	Feb. 15, 1870
98,860	Field, Franklin, Troy, N. Y. Paper box.....	Jan. 18, 1870
3,869	Same..... Paper-collar box..... (Design).....	Mar. 1, 1870
3,870	Same..... Collar and cuff box..... (Design).....	Mar. 1, 1870
3,883	Field, George A., assignor to the Albert Field Tack Company, Taunton, Mass. Tack-head..... (Design).....	Mar. 8, 1870
3,884	Same..... same..... (Design).....	Mar. 8, 1870
100,516	Field, George D., New Orleans, La. Medical compound or ointment.....	Mar. 8, 1870
109,604	Field, George W., assignor to self and Robert H. Butcher, Lowell, Mass. Reversible butt. (Antedated Nov. 12, 1870).....	Nov. 29, 1870
102,795	Field, James W., Marysville, Ohio. Needle-setter for sewing-machines.....	May 10, 1870
103,316	Field, John Bentley, Detroit, Mich. Shutter-fastener.....	May 24, 1870
100,742	Field, Joseph C., Chicago, Ill. Lawn-mower.....	Mar. 15, 1870
101,603	Field, J. D., Wataga, Ill. Adjustable elbow-joint for water-pipes. (Antedated April 1, 1870).....	April 5, 1870
101,849	Same..... Keokuk, Iowa. Combined harvester and thrasher.....	April 12, 1870
98,944	Field, Samuel, Oakham, Mass. Corn-sheller.....	Jan. 18, 1870
	Field Tack Company, Albert. ( <i>See</i> Wright, Howell W., assignor.)	
100,879	Field, Woren B., Rockville, and Burroughs Beach, Meriden, Conn. Needle-case.....	Mar. 15, 1870
102,796	Fields, William, Wilmington, Del. Manufacture of iron.....	May 10, 1870
102,797	Same..... Manufacture of steel.....	May 10, 1870
103,437	Same..... Furnace for treating cast iron to convert the same into iron and steel.....	May 24, 1870
4,069	Same..... Manufacture of steel..... (Reissuo).....	July 12, 1870
105,059	Fietz, Wilhelm C., Boston, Mass. Cornet and other wind-instruments.....	July 5, 1870
99,550	Fife, A. E., Rochester, N. Y. Fruit-jar.....	Feb. 8, 1870
102,933	Fife, James M., Beaver Falls, Pa. Casting lugs on stove-plates.....	May 10, 1870
107,895	Fifield, J. Ward, Franklin, N. H. Safety-latch.....	Oct. 4, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,450	Fifield, Levi W., assignor to Enoch Earle and Luke K. Davis, Worcester, Mass. Lifting-jack	April 5, 1870
98,752	Fifield, Winslow W., Medford, Mass. Sash-rope guide	Jan. 11, 1870
103,696	Filbert, Lewis S., Philadelphia, Pa. Pavement	Oct. 25, 1870
102,798	Fillion, Octave Eugene, France. Manufacture of artificial flowers	May 10, 1870
104,005	Fillmore, Charles W., Marengo, and Thomas M. Jones, Chicago, Ill. Wagon-axle. Same..... (See Jones & Fillmore.)	June 7, 1870
110,348	Fillmore, George Millard, St. Paul, Minn. Milk-receptacle	Dec. 20, 1870
110,221	Filson, Robert M., Willsborough, N. Y. Fence-post	Dec. 20, 1870
110,559	Filson, Ruth and Robert D. S., and John D. Cope, Xenia, Ill. Dish-washer	Dec. 27, 1870
99,302	Finch, Amasa J., assignor to Margaret A. C. Finch, New York, N. Y. Printers' chair	Feb. 1, 1870
102,384	Finch, Amon L., Sing Sing, N. Y. Pattern for casting	April 26, 1870
105,324	Finch, Eugene, Albion, N. Y. Potato-digger	July 12, 1870
103,121	Findlay, James, assignor to self and William Smellie, Toronto, Canada. Vise	Nov. 8, 1870
106,262	Fine, John G., Cincinnati, Ohio. Toy	Aug. 9, 1870
105,663	Finger, Louis, Cambridge, Mass. Electro-magnetic motor	July 26, 1870
105,664	Same..... Electro-magnetic apparatus for moving panoramas	July 26, 1870
4,093	Fink, Albert, Louisville, Ky. Bridge (Reissue)	Aug. 9, 1870
	Finkle & Lyon Manufacturing Company. (See Wendell, Washington, assignor.) Same..... (See Johnson, Albert W., assignor.)	
98,680	Finley, John E., Memphis, Tenn. Vapor-burner	Jan. 11, 1870
103,126	Same..... Hand corn-sheller	Oct. 11, 1870
99,873	Finley, Stephen L., assignor to self and Marshall Lefferts, Morrisania, N. Y. Insulator for telegraphs	Feb. 15, 1870
	Finn, Archibald T. (See Sureau & Behrens.)	
102,526	Finn, Charles, Des Moines, Iowa. Bee-hive	May 3, 1870
109,727	Finnell, Francis M., assignor to self and C. A. Culbertson, Covington, Ky. Railway-car brake	Nov. 29, 1870
101,247	Finney, Joseph R., Youngstown, Ohio. Whip-socket and rein-holder	Mar. 29, 1870
103,992	Fipps, Joshua, New Albany, Ind. Wood-bending machine	Nov. 8, 1870
104,133	Firey, Milton J., Mansfield, Ohio. Bridle-bit	June 14, 1870
104,134	Same..... same	June 14, 1870
106,680	Firey, Samuel M., Clear Spring, Md. Hair-brush	Aug. 23, 1870
109,503	Same..... Seeding-machine	Nov. 22, 1870
106,801	Firmin, George J., England. Maximum and minimum water-gauge. (Patented in England April 25, 1870)	Aug. 30, 1870
4,060	Fishbeck, Fredrick, Chicago, Ill. Traveling-bag (Reissue)	July 5, 1870
106,476	Fischer, Adolph, New York, N. Y. Brush for cleaning tumblers	Aug. 16, 1870
110,128	Fischer, Frank, Quincy, Ill. Cut-off for cisterns	Dec. 13, 1870
104,294	Fischer, Gottlieb Friderich, and Alexander Whelan, assignors to selves and Joseph Kelley, Washington, D. C. Hinge	June 14, 1870
103,897	Fischer, Hermann, Lanesville, Ind. Bung-lock	Nov. 1, 1870
103,698	Same..... Bottle-faucet	Nov. 1, 1870
107,469	Fischer, Jacob, Pittsburgh, Pa. Ironing-board	Sept. 20, 1870
105,791	Fischer, Jean C., and William E. Kittredge, Milwaukee, Wis. Railway-car coupling	July 26, 1870
107,769	Fischer, Wilhelm, assignor to Fischer & Stiehl, Prussia. Liquid-meter	Sept. 27, 1870
102,335	Fiscus, Elias, and Solomon Arney, Albion, Iowa. Washing-machine	April 26, 1870
109,814	Fish, Daniel W., Brooklyn, N. Y. Hand-stamp	Dec. 6, 1870
	Fish, Daniel W. (See Lehman, Louis, assignor.)	
	Fish, Henry H., et al. (See Parkin, William, assignor)..... (Design.) Same..... (See Leach, Thomas, assignor.)	
102,240	Fish, John S., Cleveland, Ohio. Lamp	April 26, 1870
102,241	Same..... Oil-well pump. (Antedated April 22, 1870)	April 26, 1870
101,451	Fish, R. M., Glenwood, Iowa. Dumping-platform	April 5, 1870
98,481	Fish, Warren L., Springfield, Mass. Sprinkling-pot	Jan. 4, 1870
106,802	Same..... Portable sprinkler. (Antedated Aug. 18, 1870)	Aug. 30, 1870
103,317	Fisher, Charles A., Philadelphia, Pa. Cherry-stoner	May 24, 1870
3,990	Fisher, Charles G., et al. (See McDaniel, George W., assignor.)	
109,504	Fisher, Charles R., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Reversible knob-latch..... (Reissue)	May 24, 1870
	Fisher, Cyrus, assignor to self and Augustus G. Fisher, Canton, Mass. Metallic sleeper for railways	Nov. 22, 1870
102,799	Fisher, Elam, Detroit, Mich. Duck-call	May 10, 1870
110,222	Fisher, Frank H., Nevada City, Cal. Hydraulic-mining apparatus	Dec. 20, 1870
110,223	Fisher, George W., and Hugh Reid, assignors to Gerard B. Allen & Co., and Hugh Reid, St. Louis, Mo. Cut-off valve-gear	Dec. 20, 1870
103,318	Fisher, Hart A., Elyria, Ohio. Gathering-attachment for sewing-machines	May 24, 1870
102,800	Fisher, Henry, assignor to self and William H. Williams, Canton, Ohio. Tag-fastener	May 10, 1870
101,990	Fisher, John F., assignor to self and Daniel Breed, Greencastle, Pa. Wheat-drill	April 19, 1870
101,991	Same..... Axle for wheat-drills	April 19, 1870
	Fisher, John L., et al. (See Heing, Adam, assignor.)	
101,248	Fisher, John T., assignor to James B. Clow, Pittsburgh, Pa. Preventing the incrustation of steam-boilers	Mar. 29, 1870
109,729	Fisher, John W., Albany, N. Y. Shoe	Nov. 29, 1870
	Fisher, Levi. (See Thrift, David V., assignor.)	
	Fisher, Samuel L., et al. (See Currie, Daniel, assignor.)	
106,042	Fisher, Stephen D., Normal, Ill. Seed-marker	Aug. 2, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,025	Fisher, Warren, and John Baird. ( <i>See Baird &amp; Fisher.</i> ) Fisher, Willet, Marathon, N. Y. Corner-support for carriage box and seat.....	Sept. 6, 1870
	Fisher, Willet, and Orson A. Smith. ( <i>See Smith &amp; Fisher.</i> ) Fisk, Charles D. B., <i>et al.</i> ( <i>See Wardrobe, Fisk, Curtis &amp; Fetley.</i> ) Fisk, George A., <i>et al.</i> ( <i>See Walker, Albert A., assignor.</i> )	
106,803	Fiske, Henry G., San Francisco, Cal. Machine for forming sheet-metal moldings.	Aug. 30, 1870
106,350	Fiske, Henry G., assignor to George L. Taylor and Dwight Holland, Springfield, Mass. Raisin-seeder.....	Aug. 16, 1870
	Fiske, Isaac. ( <i>See Holden, Cyrus B., assignor.</i> ) Fitch, Charles A., San Francisco, and William O. St. John, Oakland, Cal. Ledger-index.....	Mar. 22, 1870
100,994	Fitch, Charles H., Worcester, Mass. Boot.....	Nov. 8, 1870
109,122	Fitch, Eugene L., assignor to self and Carlos Clough, West Eau Claire, Wis. Passenger-register for horse-cars. (Antedated June 17, 1870).....	June 21, 1870
104,566	Fitch, James F., B. G. Devoe, and R. W. B. McLellan, said McLellan assignor to said Fitch and Devoe, Vandalia, Ill. Coffee-pot.....	Mar. 15, 1870
100,880	Fitch, M. S., <i>et al.</i> ( <i>See Van Patten &amp; Clapp, assignors.</i> ) Same..... ( <i>See Van Patten, Frederick, assignor.</i> )	
107,351	Fitch, Seymour B., Walton, N. Y. Sheet-metal cutting-machine.....	Sept. 13, 1870
	Fitts, Benaiah, and Phinehas Ball. ( <i>See Ball &amp; Fitts.</i> ) Fitts, Benjamin, Toledo, Ohio. Log-guide for circular saw-mills.....	Nov. 29, 1870
109,605	Fitts, Samuel E., assignor to George L. Winchester, Ashburnham, Mass. Loom for weaving rattan.....	Aug. 16, 1870
106,477	Fitts, Thomas B., and Augustus D. Cooke, New York, N. Y. Ice-pitcher.....	April 12, 1870
101,850	Fitzgerald, Cyrenius C., New York, N. Y. Coloring and dyeing paper.....	June 7, 1870
104,006	Fitzgerald, Cyrenius C., assignor to Fletcher Marble Company, New York, N. Y. Treating marble to preserve it.....	June 7, 1870
104,007	Same..... Producing mosaics upon marble.....	June 7, 1870
104,008	Fitzgerald, James, Brooklyn, N. Y. Balance slide-valve.....	Mar. 8, 1870
100,612	Fitzgerald, J., and T. L. Johnson. ( <i>See Johnson &amp; Fitzgerald.</i> ) Fitzgerald, Walter, Boston, Mass. Valve of rotary engines.....	Feb. 1, 1870
99,423	Fitzgibbons, Maurice, Brooklyn, N. Y. Machine for attaching thin paper to straw-boards.....	May 24, 1870
103,319	Fitzgibbons, Maurice, New York, N. Y. Wood-pavement.....	Sept. 13, 1870
107,352	Fitzhenry, Edward, Boston, Mass. Machine for dressing leather.....	Mar. 1, 1870
100,387	Fitzhugh, Benjamin G., Frederick, Md. Wash-boiler.....	June 23, 1870
104,722	Fitzhugh, Benjamin G., assignor to Jacob Byerly, Frederick, Md. Door-spring.....	Mar. 1, 1870
100,388	Fitzhugh, Charles L., Pittsburgh, Pa. Roll for forming horseshoe-blanks.....	Dec. 20, 1870
110,349	Fitzmaier, Louis, assignor to Atwater, Benham & Co., New York, N. Y. Method of ornamenting tin, &c..... (Reissue).....	Oct. 20, 1870
4,160	Flad, Henry, St. Louis, Mo. Dumb-waiter for caissons.....	Nov. 22, 1870
109,505	Flagg & Osgood. ( <i>See Osgood, James M., assignor.</i> ) Flagg, Lysander, <i>et al.</i> ( <i>See Buffington, Nathaniel E., assignor.</i> ) Flagler, Harvey K. ( <i>See Cassidy, James, assignor.</i> )	
100,881	Flammer, Christian, Chicago, Ill. Process of making glass signs, show-cards, &c.	Mar. 15, 1870
99,178	Flanagin, Henry M., assignor to self and Joseph R. Elkinton, Penn's Grove, N. Y. Key-hole guard and protector.....	Jan. 25, 1870
109,194	Flanders, John P., Vergennes, Vt. Dove-tailing machine.....	Nov. 15, 1870
105,444	Flanders, Martin P., Jay, N. Y. Washing-machine.....	July 19, 1870
102,386	Flanigan, Mark, Detroit, Mich. Spring-seat and bed-bottom.....	April 26, 1870
	Same..... ( <i>See Mitzelfeld, Charles, assignor.</i> ) Flanigan, Owen, and John Hall, jr. ( <i>See Hall &amp; Flanigan.</i> )	
100,882	Flanigan, William H., Philadelphia, Pa. Combined carriage, cradle, swing, and baby-walker.....	Mar. 15, 1870
	Flanigan, William H., and William Hazlet. ( <i>See Hazlet &amp; Flanigan.</i> ) Flanner, Rodolphus J., Plainfield Township, Mich. Fence.....	Nov. 29, 1870
109,606	Flansburg, John D., assignor to Seymour Raymond and Joseph Campbell, Philadelphia, Pa. Stove..... (Design).....	Oct. 11, 1870
4,400	Flansburgh, P. H., Haywards, Cal. Gang-plow.....	May 19, 1870
102,801	Fleck, Michael, Milwaukee, Wis. Extension-table slide.....	Jan. 25, 1870
99,075	Fleischmann, Charles L., Cincinnati, Ohio. Apparatus for rectifying alcoholic liquors.....	May 24, 1870
103,320	Same..... Apparatus for rectifying alcoholic liquors.....	Aug. 16, 1870
106,530	Fleischmann, Henry, New York, N. Y. Manufacture of yeast.....	April 26, 1870
102,387	Fleisher, Simon B., Philadelphia, Pa. Box for holding and displaying braids, tapes, &c..... (Design).....	Oct. 4, 1870
4,384	Fleming, George, New York, N. Y. Pole-ascending apparatus.....	Mar. 8, 1870
100,613	Fleming, Leonard A., West Mt. Vernon, N. Y. Wooden pail.....	Jan. 4, 1870
98,578	Flender, William H. B., and Jacob Miller. ( <i>See Miller &amp; Flender.</i> ) Flesch, Charles, Rochester, N. Y. Permutation-lock.....	Dec. 27, 1870
110,560	Flesher, Henry, Springfield Ill. Corn-harvester.....	April 12, 1870
101,721	Fletcher, Addison C., New York, N. Y. Adhesive postal and revenue stamp (Antedated October 5, 1869).....	April 5, 1870
101,604	Fletcher, Andrew J., Red Bluff, Cal. Hair-medicine.....	April 12, 1870
101,722	Fletcher, David E., assignor to self and Samuel T. Harrison, Covington, Ky. Vapor-burner.....	June 7, 1870
104,009	Fletcher, Henry, assignor to Fletcher Manufacturing Company, Providence, R. I. Trade-mark..... (Design).....	June 28, 1870
4,178	Fletcher, John, <i>et al.</i> ( <i>See McGowan, Robert L., assignor.</i> ) Fletcher, John B. ( <i>See Boynton, C. B., assignor.</i> )..... (Reissue.) Same..... same..... (Disclaimer.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,043	Fletcher, Joseph A., Eyota, Minn. Snap-hook.....	Aug. 2, 1870
107,604	Same..... Washing-machine.....	Sept. 20, 1870
104,949	Fletcher, Louis N., and Ira M. Page, Lowell, Mass. Let-off mechanism for looms.	July 5, 1870
	Flickinger, Abram M. (See Ward, Wesley G., assignor.)	
	Flinn, William H. (See Farnsworth, Loring, assignor.)	
103,593	Flint, Andrew C., Chelsea, Mass. Reading-stand.....	May 31, 1870
110,451	Flint, Charles M., Hancock, N. H. Saw-mill.....	Dec. 27, 1870
	Flint, David B., <i>et al.</i> (See Waite, James H., assignor.)	
	Flood, J. M. (See Dougherty, Eliphalet, assignor.)	
104,567	Flook, Oliver H., Middletown, Md. Hoisting-apparatus.....	June 21, 1870
	Florentin, Michel, <i>et al.</i> (See Lutz, Schultheis & Florentin.)	
101,249	Flower, James, Detroit, Mich. Lathe for squaring nuts, &c.....	Mar. 29, 1870
104,568	Same..... Stop-valve.....	June 21, 1870
104,569	Floyd, Martin C., Bloomfield, Iowa. Wagon-step.....	June 21, 1870
3,987	Flues, Eberhard, Fort Washington, Pa. Shawl-mantle..... (Design)	April 26, 1870
3,988	Same..... same..... (Design)	April 26, 1870
	Fluhrer, William F., and Charles M. Vandervoort. (See Manson, George W., assignor)..... (Design.)	
109,195	Flynn, Daniel, Fall River, Mass. Steam-boiler.....	Nov. 15, 1870
103,594	Flynn, Francis, assignor to Woonsocket Rubber Company, Smithfield, R. I. Tap for rubber-boots.....	May 31, 1870
99,660	Flynn, William H., assignor to self, Thomas J. McCormick, and E. P. Edstrom, Jr., Somerville, Mass. Machine for measuring horses for collars.....	Feb. 8, 1870
102,527	Flint, James H., South Bend, Ind. Dust-ring for watch-frames.....	May 3, 1870
103,036	Fogarty, Thomas B., New York, N. Y. Gas-generator. (Antedated May 12, 1870)	May 17, 1870
101,452	Fogelberg, Carl, Boston, Mass. Melody-attachment.....	April 5, 1870
101,605	Same..... Melody-attachment for organs, &c.....	April 5, 1870
4,472	Fogelstrand, Ferdinand, assignor to Sargent & Co., New Haven, Conn. (Door-bolt)..... (Design)	Nov. 15, 1870
4,473	Same..... Thumb-latch..... (Design)	Nov. 15, 1870
105,930	Foland, Valentine, Indianapolis, Ind. Traversing-machine.....	Aug. 2, 1870
98,945	Foley, D. D., Washington, D. C. Pen.....	Jan. 18, 1870
102,461	Same..... Tag-label.....	April 26, 1870
	Same..... (See Miller, James M., assignor)..... (Extension.)	
106,804	Follansbee, George Stores, assignor to self and John Rosencrantz, Philadelphia, Pa. Rotary steam-engine or pump.....	Aug. 30, 1870
108,697	Follansbee, Lambert T., assignor to self and George W. Linville, Washington, D. C. Wood pavement.....	Oct. 25, 1870
110,350	Follansbee, George S., assignor to self and John Rosencrantz, Philadelphia, Pa. Rotary steam-engine.....	Dec. 20, 1870
107,026	Foller, John, Washington, D. C. Lamp-shade holder.....	Sept. 6, 1870
	Follett, Francis P., and Hiram W. Hubbard. (See Hubbard & Follett). (Design.)	
105,560	Follett, Oscar S., New York, N. Y. Preserving and beautifying crystallized salts upon glass, mica, &c. (Antedated July 8, 1870).....	July 19, 1870
110,351	Follett, Thomas, Clermont, Iowa. Grain-sieve and oat-extractor.....	Dec. 20, 1870
107,027	Folliet, Claude Paul, France. Compound for destroying the oidium in vines, plants, &c.....	Sept. 6, 1870
110,129	Folsom, Charles, New York, N. Y. Note, check, &c., to prevent alteration.....	Dec. 13, 1870
101,250	Folsom, Hiram C., Bangor, Me. Converting articles made of iron into steel.....	Mar. 29, 1870
	Folsom, John G. (See Kendall, George F., assignor.)	
	Folsom, John T. and John S. (See Marshall, Moses S., assignor.)	
100,279	Folsom, Joseph L., East Boston, Mass. Oil-can.....	Mar. 1, 1870
100,517	Foltz, W. K., and William A. McCool, Ashland, Ohio. Wine and cider mill.....	Mar. 8, 1870
103,859	Folwell, John T., Camden, N. J. Door-spring.....	June 7, 1870
108,889	Fontaine, Eugene, assignor to self and William A. Roberts, Fort Wayne, Ind. Locomotive smoke-stack.....	Nov. 1, 1870
	Foos, William and Lamar, <i>et al.</i> (See Kraatz, David K., assignor).... (Reissue.)	
	Foote, E. I., <i>et al.</i> (See Camp, M. M., assignor.)	
	Same..... (See Phipps, D. Goffe, assignor.)	
101,992	Foote, Lucas, Fairfield, Ohio. Boiler-feeder.....	April 19, 1870
105,060	Foote, Theodore M., and Charles A. Randall, Brooklyn, E. D., N. Y. Telegraphic printing-apparatus.....	July 5, 1870
102,242	Forbes, Charles Henry, and William Forbes Rutter, Philadelphia, Pa. Hinge for shutters.....	April 26, 1870
98,753	Forbes, Isaac W., Laporte, Ind. Oscillating steam-valve.....	Jan. 11, 1870
98,754	Same..... Steam-engine valve-gear.....	Jan. 11, 1870
98,755	Same..... Balance slide-valve.....	Jan. 11, 1870
101,851	Forbes, Robert B., Boston, Mass. Rigging for vessels.....	April 12, 1870
107,470	Ford, Charles, and Frank C. Gorbuntt, Mason, Ill. Washing-machine.....	Sept. 20, 1870
104,723	Ford, Charles S., assignor to self and Charles Young, Philadelphia, Pa. Gas-burner.....	June 28, 1870
103,579	Ford, Charles S., assignor to Charles Young, Philadelphia, Pa. Gas-burner.....	Oct. 25, 1870
103,165	Ford, Frederic G., New York, N. Y. Furniture-easter.....	May 17, 1870
101,358	Ford, John C., assignor to William A. Ives, Cambridgeport, Mass. Plumbago-press.....	Mar. 29, 1870
107,471	Ford, John D., Baltimore, Md. Propeller.....	Sept. 20, 1870
107,242	Ford, Onri C., assignor to self and N. C. Stiles, Burlington, Conn. Hand-punch.	Sept. 13, 1870
	Ford, Samuel S., and Austin Sly. (See Sly & Ford.)	
107,243	Ford, Walter J., Chicago, Ill. Piston-packing.....	Sept. 13, 1870
103,860	Ford, William S., Evansville, Ind. Portable tobacco-press.....	June 7, 1870
105,044	Foreacre, Masculine, New Harrisburg, Ohio. Bridle-bit.....	Aug. 2, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,028	Foreman, Charles R., West Branch, N. Y. Elevator.....	Sept. 6, 1870
107,029	Foreman, Charles V., Washington, D. C. Balancing millstone.....	Sept. 6, 1870
102,388	Foreman, John, Pottstown, Pa. Device for moving cars.....	April 26, 1870
104,295	Same..... Truss-frame bridge.....	June 14, 1870
99,303	Forest, Demsey, Mottomosa, Texas. Machine for bending stirrups.....	Feb. 1, 1870
98,946	Forney, Emanuel, and Jonas Swab, Elizabethtown, Pa. Horse hay-fork.....	Jan. 18, 1870
102,528	Forrest, Asa, assignor to self and O. L. French, Moingona, Iowa. Table-leaf support.....	May 3, 1870
101,359	Forrest, Curtis T., San Francisco, Cal. Water-closet valve.....	Mar. 29, 1870
163,993	Forrester, Isaac N., Bridgeport, Conn. Children's carriage.....	Nov. 8, 1870
110,352	Same..... Oscillating steam-engine.....	Dec. 20, 1870
110,561	Same..... Children's carriage.....	Dec. 27, 1870
3,888	Forrester, I. N., and James H. Luddington, assignors through mesne assignments to the Forrester Manufacturing Company, Bridgeport, Conn. Pump. (Reissue).....	Mar. 22, 1870
	Forsyth, S. C. (See Milliken, William H. and John, assignors.) (Two cases.) (Reissue.).....	
109,506	Forshaw, William, Chicago, Ill. Die for making chord-bars.....	Nov. 22, 1870
107,353	Forsman, Joseph A., Chicago, Ill. Grinding-mill.....	Sept. 13, 1870
104,011	Forster, Thomas H., Indianapolis, Ind. Bee-hive.....	June 7, 1870
101,993	Forsyth, Frederick J., Bay City, Mich. Velocipede.....	April 19, 1870
101,994	Forsyth, James B., Boston, Mass. Manufacture of elastic rolls.....	April 19, 1870
102,104	Forsyth, James B., and John J. Haley, Philadelphia, Pa. Elastic roll.....	April 19, 1870
103,595	Forsyth, James B., <i>et al.</i> (See Kays, William, assignor.).....	
100,389	Forsyth, Robert G., Clayton, Ind. Ditching-machine.....	May 31, 1870
100,743	Fort, Alexander S., Cincinnati, Ohio. Hydrant.....	Mar. 1, 1870
101,360	Fort, Miranda, Talbotton, Ga. Plow.....	Mar. 15, 1870
105,665	Fortney, William H., and William E. Sheaffer, Middletown, Pa. Shoe-fastening.....	Mar. 29, 1870
	Foss, Eliphalet J., Cambridge, Mass. Movable screen for photographers.....	July 26, 1870
	Foss, James M. (See Eaton, Richard, assignor.).....	
108,580	Foster, Abraham G. W., Franklin, Ga. Cotton-planter.....	Oct. 25, 1870
101,453	Foster, A. W., Millbridge, Me. Churn.....	April 5, 1870
102,105	Foster, Calvin A., Fitchburg, Mass. Scissors-sharpener.....	April 19, 1870
102,106	Same..... Combination-tool.....	April 19, 1870
101,251	Foster, Dan. P., Waltham, Mass. Bit-stock.....	Mar. 29, 1870
3,857	Foster, Edward, Boston, Mass. Lamp-chimney..... (Design.)	Feb. 22, 1870
102,673	Foster, Hickman E., assignor to self, D. J. Block, and J. T. Gates, Decatur, Ill. Spring-seat for wagons.....	May 3, 1870
100,744	Foster, Horace N., East Greenwich, R. I. Cigar-piercer.....	Mar. 15, 1870
4,032	Foster, Israel, Philadelphia, Pa. Carpet-pattern..... (Design.)	May 17, 1870
	Same..... (See Crabtree, Jonathan, assignor)..... (Design.)	
	Same..... (See Kerr, William, assignor)..... (Three cases.) (Design.)	
	Same..... (See Christie, Hugh, assignor)..... (Three cases.) (Design.)	
	Same..... (See Kerr, Hugh S., assignor)..... (Three cases.) (Design.)	
105,931	Foster, James, jr., Camden, N. J. Boat-detaching apparatus.....	Aug. 2, 1870
	Same..... (See Wesner, Samuel F., assignor.).....	
105,325	Foster, James D., Montgomery, Ala. Ox-yoke.....	July 12, 1870
98,482	Foster, John F., New York, N. Y. Rotary pump.....	Jan. 4, 1870
103,994	Foster, John T., assignor to William Stanley, Jersey City, N. J. Window-sash weight.....	Nov. 8, 1870
104,135	Foster, Joseph S., Salem, Mass. Carriage-spring.....	June 14, 1870
99,304	Foster, Lionel, Burlington, Iowa. Thatch-roof.....	Feb. 1, 1870
99,076	Foster, R. S., Madison, N. J. Night-latch.....	Jan. 25, 1870
105,932	Foster, S. Conant, New York, N. Y. Mode of operating sewing and other machines.....	Aug. 2, 1870
105,561	Foster, William, jr., New York, N. Y., and George P. Ganster, Reading, Pa. Gas-apparatus for railroads, &c.....	July 19, 1870
107,472	Foster, William A., Fitchburg, Mass. Locomotive.....	Sept. 20, 1870
107,605	Same..... Exhaust-nozzle for steam-engines.....	Sept. 20, 1870
100,995	Foster, William F., Chicago, Ill. Spool-case.....	Mar. 22, 1870
99,424	Foster, William G., Apalachin, N. Y. Railway-car brake.....	Feb. 1, 1870
	Foth, Albert E., <i>et al.</i> (See Bemis, Foth & Goodrich.).....	
108,014	Fouche, Nelson, New Orleans, La. Flue.....	Oct. 4, 1870
105,562	Foucault, Alfred, France. Electro-magnetic attachment to ships' compasses.....	July 19, 1870
107,473	Fountain, Vincent, jr., West New Brighton, N. Y. Bung.....	Sept. 20, 1870
100,134	Fowler, Edgar M., assignor to Henry G. McGonegal, New York, N. Y. Street-pavement.....	Feb. 22, 1870
105,933	Fowler, Elisha M., assignor to self and Andrew McCallum, Washington, D. C. Soda-fountain.....	Aug. 2, 1870
98,483	Fowler, F. G., Norwalk, Conn. Steering-propeller.....	Jan. 4, 1870
107,030	Fowler, George B., Brooklyn, N. Y. Game-box for ten-pins.....	Sept. 6, 1870
	Fowler, George H., and Lewis J. Elliott. (See Elliott & Fowler, assignors.).....	
107,474	Fowler, Harvey, Washington, D. C. Mechanical hand-motor.....	Sept. 20, 1870
107,475	Same..... same.....	Sept. 20, 1870
100,703	Fowler, Henry, assignor to Jason Crane, Detroit, Mich. Muff and collar box.....	Mar. 8, 1870
104,724	Fowler, Joiville F., Alliance, Ohio. Bow for carriage-tops.....	June 28, 1870
	Fowler, Joseph W., and Thomas Sandbach. (See Sandbach & Fowler.).....	
98,484	Fowler, Samuel W., Brooklyn, N. Y. Lamp-chimney.....	Jan. 4, 1870
101,723	Same..... Lamp.....	April 12, 1870
102,674	Fowler, Samuel W., assignor to Alfred C. Hodgeman, Brooklyn, N. Y. Lamp-burner.....	May 3, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,389	Fowler, Thaddeus, Seymour, Conn. Machine for rolling metal bars .....	April 26, 1870
103,861	Same.....Tottensville, N. Y. Method of binding grain .....	June 7, 1870
103,862	Same.....Machine for binding grain .....	June 7, 1870
110,452	Same.....Drip-attachment for umbrellas.....	Dec. 27, 1870
107,896	Fowler, Thaddeus, assignor to Excelsior Needle Company, Tottensville, N. Y. Machine for polishing the eyes of sewing-machine needles .....	Oct. 4, 1870
	Fowler, William H. (See Smith and Pettingell, assignors.)	
104,570	Fox, Francis, Meadville, Pa. Animal-trap.....	June 21, 1870
98,579	Fox, George H., Philadelphia, Pa. Breech-loading fire-arm .....	Jan. 4, 1870
107,244	Fox, George, Wakefield, England. Manner of treating cod-liver and castor oils.	Sept. 13, 1870
98,682	Fox, Jacob, Bucyrus, Ohio. Fence.....	Jan. 11, 1870
99,179	Fox, Joseph G., Oregon, Wis. Lever and stamp-puller .....	Jan. 25, 1860
	Fox, Lewis, and John S. Kenyon. (See Kenyon and Fox).....(Two cases.)	
106,631	Fox, Samuel, England. Umbrella. (Patented in England, Sept. 21, 1868).....	Aug. 23, 1870
107,031	Fox, William J., Morrisania, N. Y. Self-winding counter-spool.....	Sept. 6, 1870
109,607	Foye, William H., San Francisco, Cal. Manufacture of artificial stone.....	Nov. 29, 1870
3,803	Fracker, F. T., assignor to P. and F. Corbin, New Britain, Conn. Hinge. Reissue of design).....	Jan. 18, 1870
	Frailey, William P., and James F. Duffy. (See Duffy & Frailey.)	
103,166	Frakes, Thomas A., Middletown, Ill. Bee-hive.....	May 17, 1870
	Fraley, John U., and Pres Moulding. (See Moulding & Fraley.)	
100,518	Frame, Roland S., Washington, Ohio. Horse hay-fork. (Antedated Dec. 31, 1869.)	Mar. 8, 1870
107,354	France, Albert L., Wilmington, Del. Shutter fastener.....	Sept. 13, 1870
	Francis, C. S. and Henry, <i>et al.</i> (See Smith & Brown, assignors.) (Two cases.) (Design.)	
102,243	Francis, Lewis, New York, N. Y. Ink for printing and other purposes .....	April 26, 1870
	Francis, Lewis, and Frederick W. Letmate, assignors to Lewis Francis and Cyrus H. Loutrel, New York, N. Y. Composition for inking-rollers, pads, and other printing purposes.....(Disclaimer).....	Mar. 28, 1870
109,311	Francis, Russel, Woodstock, Wis. Water-engine.....	Nov. 15, 1870
106,147	Frank, Ernst, and John B. Adt, Baltimore, Md. Apparatus for drying phosphates.....	Aug. 9, 1870
100,745	Franke, Henry, Brooklyn, N. Y. Gravel-pan.....	Mar. 15, 1870
202,244	Franke, L. Ottmar, Baltimore, Md. Rainbow spinning-top.....	April 26, 1870
105,792	Franke, Ludwig O., Baltimore, Md. Chameleon-whirligig .....	July 26, 1870
	Frankfurth, William. (See Kroeger, Werner, assignor.)	
108,247	Franklin, Asahel and Francis M., Springfield, Ohio. Plow.....	Oct. 11, 1870
107,606	Franklin, Francis M., assignor to self and Asahel Franklin, Springfield, Ohio. Plow.....	Sept. 20, 1870
	Franklin, George E. (See Crooks, John P., assignor.)	
98,756	Franklin, Henry L., and Eugene Clark, Nashua, N. H. Holder for brooms and mops .....	Jan. 11, 1870
	Franklin, H. W., and C. R. Morris. (See Morris & Franklin.)	
107,032	Franklin, Jonathan H., assignor to self and J. P. McCallister, Avoca, Wis. Adjustable die for bending mold-boards.....	Sept. 6, 1870
102,245	Frantz, Oliver P., St. Anthony, Minn. Device for boring wells.....	April 26, 1870
99,425	Franz, William, and William Pope, Crestline, Ohio. Circular knitting-machine.....	Feb. 1, 1870
99,426	Same.....same.....	Feb. 1, 1870
102,529	Same.....Setting-up device for circular knitting-machine .....	May 3, 1870
105,187	Same.....Knitting-machine .....	July 12, 1870
98,947	Fraser, James, and William Thomas, New York, N. Y. Horse-power.....	Jan. 18, 1870
101,252	Fraser, John, Dowagiac, Mich. Horse-collar pad-press.....	Mar. 29, 1870
108,995	Same.....Horse-collar pad.....	Nov. 8, 1870
4,159	Fraser, John, Frank Furness, and George W. Hewitt, Philadelphia, Pa. Building-front.....(Design).....	June 21, 1870
108,469	Fraser, Spencer L., West Town, N. Y. Manure-distributor and seed-sower.....	Oct. 18, 1870
105,188	Frazee, Joshua W., Peoria, Ill. Boring-machine.....	July 12, 1870
110,130	Frazee, Lawrence F., Jersey City, N. J. Coal-barge.....	Dec. 13, 1870
103,438	Frazee, William L., St. Louis, Mo. Washing-machine.....	May 24, 1870
110,615	Frazier, Clinton W., Brooklyn, N. Y. Fur-set box.....	Dec. 27, 1870
106,759	Frazier, Kasson, Syracuse, N. Y. Device for removing lime from hard water.....	Aug. 23, 1870
4,059	Frazier, Thomas J., Clinton, Iowa. Emery-wheel.....(Design).....	May 24, 1870
101,253	Frear, Aaron H., Chicago, Ill. Manufacture of artificial stone.....	Mar. 29, 1870
106,263	Frear, George A., Chicago, Ill. Manufacture of artificial marble.....	Aug. 9, 1870
106,682	Frebault, Gilbert A., France. Ballot-box.....	Aug. 23, 1870
	Fredericks, Charles D. (See Brower, Henry L., assignor.)	
100,996	Freeland, John, and Daniel Ward, New York, N. Y. Railway-rail joint.....	Mar. 22, 1870
100,023	Freeland, Oswald S., Newport, R. I. Nut-lock.....	Feb. 22, 1870
	Freeman, Albert A. (See Zitzman, E. H., assignor.)	
98,693	Freeman, Alfred, Peoria, Ill. Railroad pushing-jack .....	Jan. 11, 1870
109,402	Freeman, Augustus M., Charles P. Idell, and Bergen Vanderhoven, Metuchen, N. J. Picket-fence post.....	Nov. 22, 1870
103,731	Freeman, Benjamin P., and Pat Payton, Macon, Ga. Locomotive spark-arrester. (Antedated April 1, 1870).....	May 31, 1870
	Freeman, John C., and John T. Gathright. (See Gathright & Freeman.) (Reissue.)	
98,948	Freeman, Lambert, New York, N. Y. Table.....	Jan. 18, 1870
105,793	Freemau, Matthew R., Macon, Ga. Carriage-axle.....	July 26, 1870
109,886	Freeman, Moody G., Wenona, Ill. Iron culvert.....	Dec. 6, 1870
108,470	Freeman, Safford B., Burlington, Iowa. Bed-bottom.....	Oct. 18, 1870
105,794	Freet, Christian R., Upper Strasburgh, Pa. Dish-fastener.....	July 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,045	Fremon, James A., and James H. Carkeet, Montgomery, Ala. Roller-skate.....	Aug. 2, 1870
103,439	French, Abel, Central City, Iowa. Water-power mechanism.....	May 24, 1870
3,812	French, Alonzo, Philadelphia, Pa. Inkstand..... (Design)	Jan. 11, 1870
3,871	Same..... Ink-bottle..... (Design)	Mar. 1, 1870
105,061	Same..... Mode of securing glass vessels to metal bases.....	July 5, 1870
	French, Arasmus, New Haven, and Charles Frost, Waterbury, Conn. Making boxes of paper-pulp..... (Extension)	June 29, 1870
101,724	French, Carlos, Seymour, Conn. Car-spring.....	April 12, 1870
106,805	French, Charles A., Lowell, Mass. Folding-seat.....	Aug. 30, 1870
108,015	French, Erastus S., Westminster, Mass. Machine for scraping chair-backs.....	Oct. 4, 1870
98,485	French, Evelyn F., New York, N. Y. Cover for sewing-machines.....	Jan. 4, 1870
103,863	Same..... same.....	June 7, 1870
107,674	French, Henry E., Unity, N. H. Knife-scourer.....	Sept. 27, 1870
107,675	French, James E., and James M. Stephenson, Pendleton, Ind. Machine for sawing marble.....	Sept. 27, 1870
102,107	French, James S., Alexandria, Va. Wheel for locomotive land-conveyance and coal-hoisting apparatus.....	April 19, 1870
98,861	French, Jerome, Independence, Iowa. Harvester-rake.....	Jan. 18, 1870
104,296	French, John A., assignor to self and Riverious P. Elmore, Milwaukee, Wis. Earth-closet.....	June 14, 1870
105,563	French, John F., Boston, Mass. Blotting-pad.....	July 19, 1870
99,661	French, John H., Albany, N. Y. Writing-slate.....	Feb. 8, 1870
	French, John M., jr. (See Stiles, David L., assignor.)..... (Reissue)	
	French, O. L. (See Forrest, Asa, assignor.).....	
109,403	French, William and James, assignors to William French, Keokuk, Iowa. Corn-planter.....	Nov. 22, 1870
	French, W. H. (See Reeves, Joseph W., assignor.)..... (Two cases)..... (Design)	
99,427	Freudenau, William, St. Louis, Mo. Manufacture of flour.....	Feb. 1, 1870
105,062	Frey, Franklin, assignor of three-fourths interest to A. H. Butts, jr., William H. Meacham, and Charles J. Karney, Liberty, Ill. Hay-press.....	July 5, 1870
102,390	Frey, Louis, Newark, N. J., and George Macardle, Brooklyn, N. Y. Pipe and bolt wrench.....	April 26, 1870
108,127	Frick, George P., Baltimore, Md. Device for starting street-cars.....	Oct. 11, 1870
107,171	Frick, Jacob G., Pottsville, Pa. Wire cloth for coal screens.....	Sept. 6, 1870
106,806	Fricke, William E., Mexico, Mo. Combined planter and seeder.....	Aug. 30, 1870
104,012	Fricke, Jacob, and Americus Warden, Cincinnati, Ohio. Hydrant.....	June 7, 1870
106,046	Friedemann, August, Waverly, Iowa. Harrow.....	Aug. 2, 1870
106,683	Friedmann, Alexander, Austria. Steam-pump.....	Aug. 23, 1870
100,519	Friend, John P., and Benjamin R. Annable, Salem, Mass. Hide-mill.....	Mar. 8, 1870
102,246	Fries, Karolina, West Zanesville, Ohio. Compound for cleaning silk.....	April 26, 1870
	Fringer, Jacob. (See Hildebrand, John, assignor.).....	
109,887	Frings, Charles H., assignor to self and Charles Braches, Centerton, Mo. Sac-charitifying mash from grain.....	Dec. 6, 1870
98,486	Frink, C. R. Norwich, N. Y. Hay-spreader.....	Jan. 4, 1870
3,826	Frink, Isaac P., New York, N. Y. Reflector..... (Division A, reissue)	Feb. 8, 1870
3,827	Same..... same..... (Division B, reissue)	Feb. 8, 1870
104,725	Frink, Samuel C., Indianapolis, Ind. Washing-machine.....	June 28, 1870
105,666	Same..... Depurator.....	July 26, 1870
	Frisbee, William B., and Gustav A. Scott. (See Scott & Frisbee.).....	
103,596	Frisbie, Charles H., Chicago, Ill. Exhaust-nozzle.....	May 31, 1870
101,725	Frisbie, John L., Hillsdale, Mich. Water-wheel.....	April 12, 1870
	Frisby, Abram C., et al. (See West, Thomas J., assignor.).....	
4,385	Fritsch, Hugo O., New York, N. Y. Plate for pitcher-stands..... (Design)	Oct. 4, 1870
	Frizell, John C. (See Hollenberry, Frank, assignor.).....	
98,580	Frizelle, H. J., East Saginaw, Mich. Coal-stove.....	Jan. 4, 1870
	Froggatt, Cephas, et al. (See Kirk, Shelmerdine & Froggatt.).....	
103,597	Froggett, Job, Youngstown, Ohio. Hot-blast oven.....	May 31, 1870
100,024	Froh, George, Philadelphia, Pa. Stove-grate.....	Feb. 22, 1870
106,807	Froman, James H., Plattsburgh, Mo. Car-coupling.....	Aug. 30, 1870
	Fromer, Jacob. (See Earnest, William H., assignor.).....	
	Frost, Charles and Erasmus French. (See French & Frost)..... (Extension)	
102,108	Frost, Frederick W., Somerville, Mass. Shutter-fastener.....	April 19, 1870
101,852	Frost, Frederick W., and Stephen L. Hayward, Somerville, Mass. Rotary blotter.....	April 12, 1870
103,864	Frost, Henry S., assignor to self, Anthony G. Davis, and Augustus N. Woolson, Watertown, Conn. Umbrella-rib.....	June 7, 1870
	Frost, Henry S., and Anthony G. Davis. (See Davis & Frost, assignors.).....	
107,245	Frost, Isaac H., Bristol, Conn. Bracket-shelf.....	Sept. 13, 1870
103,440	Frost, Mahlon S., New York, N. Y. Electro-magnet.....	May 24, 1870
	Same..... (See Paine, Henry M., assignor.)..... (Six cases.)	
	Same..... (See Hill, Joseph, assignor.).....	
101,115	Fruc, William B., Houghton, Mich. Car, track, and operating apparatus for mines.....	Mar. 22, 1870
107,607	Fruen, William Henry, Boston, Mass. Liquid-meter.....	Sept. 20, 1870
	Fry, Samuel H., and George Hollinger. (See Hollinger & Fry.).....	
100,997	Frye, Edward S., Salem, Mass. Removing colors from leather.....	Mar. 22, 1870
103,441	Frye, William H. H., North Fryeburgh, Me. Hay-spreader.....	May 24, 1870
108,476	Fugate, Thomas, Cincinnati, Ohio. Box-stereoscope.....	Sept. 20, 1870
100,998	Fulghum, Jesse P., assignor to self and Davis, Lawrence & Co., Dublin, Ind. Grain-drill.....	Mar. 22, 1870
107,770	Fulkerson, William, Three Rivers, Mich. Setting of fence-posts.....	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,865	Fullagar, William, Brooklyn, N. Y. Shade for gas-lights.....	June 7, 1870
108,996	Fuller, David, Fullersburgh, Ill. Attachment of cultivator-frames to wagon axle-trees.....	Nov. 8, 1870
	Fuller, Erwin J., and Frederick S. Nettleton. ( <i>See</i> Nettleton & Fuller.)	
101,853	Fuller, Frederic, Providence, R. I. Apparatus for molding pipe.....	April 12, 1870
103,167	Fuller, George Pliny, Humphrey, N. Y. Curtain-fixture.....	May 17, 1870
105,063	Same..... Lamp.....	July 5, 1870
106,148	Fuller, Henry, Cattaraugus, N. Y. Truss.....	Aug. 9, 1870
103,442	Fuller, Jim B., Norwich, Conn. Lamp.....	May 24, 1870
103,598	Same..... Lamp-burner.....	May 31, 1870
105,795	Same..... Argand lamp-burner.....	July 26, 1870
100,746	Fuller, John and Herbert, Lockington, Ohio. Combination water-wheel.....	Mar. 15, 1870
	Fuller, Margaret Cate, and Harriet Godfrey Emery. ( <i>See</i> Emery & Fuller.)	
104,726	Fuller, Olney, Bennington, Vt. Water-wheel.....	June 28, 1870
	Fuller, Warren & Co. ( <i>See</i> Harwood, Luther W., assignor.)..... (Design.)	
104,950	Fuller, Willard M., New York, N. Y. Water-meter.....	July 5, 1870
105,796	Same..... Rotary engine.....	July 26, 1870
110,562	Fuller, William H., assignor to self and Gilbert J. Kingsbury, Brockport, N. Y. Treating hides and manufacturing leather.....	Dec. 27, 1870
100,520	Fullmer, A. D., Buffalo, N. Y. Tanning.....	Mar. 8, 1870
109,404	Fulton, Andrew, Albany, N. Y. Gas-burner.....	Nov. 22, 1870
108,123	Fulton, Charles, New York, N. Y. Spring-mattress.....	Oct. 11, 1870
107,676	Fulton, David, St. Helena, Cal. Plow.....	Sept. 27, 1870
103,168	Fulton, Jefferson L., and Julius Brace, Covington, Ky. Bituminous-rock pavement.....	
103,169	Same..... Material for roofing and paving.....	May 17, 1870
103,866	Fulton, John S., Gallatin, N. Y. Thrashing-machine.....	June 7, 1870
100,390	Funk, John S., Marysville, Pa. Jack for removing the cross-heads of locomotives.....	Mar. 1, 1870
103,037	Funk, Peter, and J. Nicodemus Boader, Buffalo, N. Y. Insect-trap.....	May 17, 1870
106,572	Funk, William, and George W. Port, Warrensburgh, Mo. Coffee-pot.....	Aug. 23, 1870
107,355	Fuos, Matthias, Castroville, Texas. Thrashing-machine.....	Sept. 13, 1870
104,727	Furber, George C., Yreka, Cal. Medical compound.....	June 28, 1870
106,149	Same..... Device for packing bottles.....	Aug. 9, 1870
103,732	Furbish, Isaiah M., Augusta, Me. Washing-machine.....	May 31, 1870
110,224	Furnas, Robert, Friendswood, Ill. Hay-elevator.....	Dec. 20, 1870
	Furness, Frank, <i>et al.</i> <i>See</i> Fraser, Furness & Hewitt.)..... (Design.)	
110,225	Furrer, Jacob, New York, N. Y. Warping-machine. (Antedated Dec. 9, 1870).....	Dec. 20, 1870
108,129	Fyans, Thomas, assignor to self and A. T. Thomson, Taunton, Mass. Composition for welding and restoring steel.....	Oct. 11, 1870
106,979	Gaar, Abraham, Richmond, Ind. Horse-power apparatus.....	Aug. 30, 1870
	Gaar, Abraham, <i>et al.</i> ( <i>See</i> Shearson, Andrew, assignor.)	
104,571	Gaar, Abraham, Richmond, Ind. Grain-separator.....	June 21, 1870
98,581	Gabel, Nelson, Minneapolis, Minn. Hay-rake and loader.....	Jan. 4, 1870
102,802	Gabelmann, Henry, Fort Scott, Kansas. Bench-pin.....	May 10, 1870
108,997	Gabriel, Gilbert G., Olive, Mich. Bee-hive.....	Nov. 8, 1870
100,391	Gage, H. A., Manchester, N. H. Paper-cutting machine.....	Mar. 1, 1870
106,684	Gage, William, Buffalo, N. Y. Combined mop-head and wringer.....	Aug. 23, 1870
99,180	Gahn, Henrik, Sweden. Preserving meat.....	Jan. 25, 1870
103,321	Gahr, Conrad, Newark, N. J. Pad-plate for harness.....	May 24, 1870
99,874	Gaillac, Eugene G., Cutler, Me. Boom for vessels.....	Feb. 15, 1870
	Gaines, Richard, and Robert Skinner. ( <i>See</i> Skinner & Gaines.)	
99,769	Gair, John, assignor to self and Joseph J. Walton, New York, N. Y. Gas-carbureting apparatus.....	Feb. 15, 1870
110,226	Gale, Anthony, and Henry R. Johnson, Shelby County, Ky. Hame-fastener.....	Dec. 20, 1870
104,441	Gale, Charles C., Indianapolis, Ind. Shield for padlocks.....	June 21, 1870
99,552	Gale, D'Alembert T., Poughkeepsie, N. Y. Washer and wringer.....	Feb. 8, 1870
108,998	Same..... Fort Wayne, Ind. Bed-spring.....	Nov. 8, 1870
107,246	Gale, Henry H., Eugene City, Oregon. Galley-rest.....	Sept. 13, 1870
103,038	Gale, Horatio, Albion, Mich. Plow.....	May 17, 1870
107,033	Same..... same.....	Sept. 6, 1870
3,872	Gale, L. D., assignor through mesne assignments to William J. Nichols, Alden B. Rand, and Richard H. Brown, Washington, D. C. Apparatus for the manufacture of gas..... (Reissue).....	Mar. 8, 1870
3,873	Same..... Manufacture of gas..... (Reissue).....	Mar. 8, 1870
3,912	Gale, Warren, assignor to self and B. B. Belcher, Peekskill, N. Y. Straw-cutter. (Reissue).....	April 12, 1870
105,189	Gallaer, Peter N., and Isaac C. Tate, New London, Conn. Machine for making horseshoe-nails.....	July 12, 1870
108,581	Gallagher, Bernard, St. John's, N. B. Skate-fastening.....	Oct. 25, 1870
102,247	Gallagher, Henry N., Worcester, Mass. Revolving-bar toy.....	April 26, 1870
107,477	Gallagher, John, Cleveland, Ohio. Cooking-apparatus.....	Sept. 20, 1870
105,190	Gallagher, Joseph P., St. Louis, Mo. Gas-machine.....	July 12, 1870
4,140	Same..... Cock..... (Reissue).....	Oct. 4, 1870
108,343	Gallagher, Owen, Boston, Mass. Socket for lock-spindles.....	Oct. 18, 1870
100,135	Gallipo, Joseph, Cohoes, N. Y. Machine for cutting soap into slabs.....	Feb. 22, 1870
99,662	Galloway, William, Philadelphia, Pa. Fruit-jar.....	Feb. 15, 1870
101,606	Same..... Fastening for fruit-jars.....	April 5, 1870
109,507	Galloway, William, Philadelphia, Pa. Securing the tops of jars.....	Nov. 22, 1870
	Gallup, Henry H. ( <i>See</i> Hunter, Edward, assignor.)	
99,551	Gally, Merritt, assignor to Allen Carpenter, Rochester, N. Y. Printing-press..	Feb. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,254	Gally, Merritt, assignor to Allen Carpenter, Rochester, N. Y. Printing-press.	Mar. 29, 1870
99,305	Galmann, H., and Charles R. Uhe, Buchanan, Pa. Joist-protector.	Feb. 1, 1870
	Gamage, Gideon L. (See Goodwin, Gamage & Goodwin.)	
102,530	Gammel, William F., assignor to self and Jacob Weible, Elizabeth, N. J. Lap-board	May 3, 1870
98,684	Gammell, Frederick W., Spring Valley, Iowa. Latch	Jan. 11, 1870
107,172	Gamwell, Samuel, Wayland, Mich. Pruning-tool	Sept. 6, 1870
105,326	Ganoug, Lather M., Friar's Point, Miss. Cotton-cultivator	July 12, 1870
	Ganster, George P., and William Foster, jr. (See Foster & Ganster.)	
4,075	Gantz, George F., New York, N. Y. Label (Design)	May 31, 1870
100,521	Ganyard, Henry O., assignor to Ami Hills, Rochester, N. Y. Die for forming shovels	Mar. 8, 1870
	Garbutt, Frank C., and Charles Ford. (See Ford & Garbutt.)	
101,454	Garcin, Leon Paul, assignor to self and John D. Hooker, San Francisco, Cal. Lifting-jack	April 5, 1870
100,136	Gard, Benjamin M., Urbana, Ohio, and Emery R., Chicago, Ill. Brick-machine	Feb. 22, 1870
4,108	Gard, Benjamin M., Urbana, Ohio, and Emery R., Chicago, Ill., assignors to the United States Brick-Machine Company. Brick-machine (Reissue)	Aug. 23, 1870
103,248	Gard, Samuel F., New Orleans, La. Ditching-machine	Oct. 11, 1870
100,392	Gardiner, Charles O., Springfield, Ohio. Sickle-bar	Mar. 1, 1870
	Gardiner, Charles O., et al. (See Thomas, Mast & Gardiner) (Reissue.)	
100,025	Gardiner, H., New York, N. Y. Churn. (Antedated Feb. 5, 1870)	Feb. 22, 1870
109,312	Gardiner, Heman, New York, N. Y. Railway-car coupling. (Antedated Nov. 12, 1870)	Nov. 15, 1870
	Gardiner, J. B. (See Ceiley, Archibald H., assignor.)	
107,034	Gardiner, Perry G., New York, N. Y. Car-spring	Sept. 6, 1870
107,035	Same. same	Sept. 6, 1870
107,036	Same. same	Sept. 6, 1870
108,698	Same. Railway-car coupler and buffer	Oct. 25, 1870
99,875	Gardiner, Samuel, jr., New York, N. Y. Candlestick	Feb. 15, 1870
110,453	Gardner, Abram A., Savannah, Mo. Washing-machine	Dec. 27, 1870
108,775	Gardner, Charles J., Philadelphia, Pa. Machine for grinding saw-blades	Nov. 1, 1870
98,862	Gardner, Edward V., and P. M. Crane, England. Composition for coating ships, boats, &c	Jan. 18, 1870
102,531	Gardner, Franklin, Carlisle, Pa. Fastening tubes in grain-drills. (Antedated April 18, 1870)	May 3, 1870
102,248	Gardner, George, assignor to self, Oliver L., and William Gardner, Clarksville, N. J. Book rack and stand	April 26, 1870
103,867	Gardner, Joseph W., Shelburne Falls, Mass. Attaching handles to cutlery	June 7, 1870
105,934	Gardner, Mitchell C., Rochester, N. Y. Mode of and device for making gas-kets for steam-packings	Aug. 2, 1870
99,306	Gardner, Smith, assignor to the International Marble Coloring Company, New York, N. Y. Coloring marble	Feb. 1, 1870
107,608	Gardner, Smith, assignor to self and Ephraim Howe, New York, N. Y. Protecting dikes and embankments against the ravages of animals, &c	Sept. 20, 1870
103,599	Gardner, William, San Francisco, Cal. Percussion-fuse	May 31, 1870
104,728	Same. Catalpa, Ky. Grain cleaner and separator	June 28, 1870
101,116	Gardner, William and George, assignors to selves, Oliver L. Gardner, and R. Westbrook Myers, Glen Gardner Station, N. J. Cooking stove and range	Mar. 22, 1870
105,191	Gardner, William R., Leonardsville, N. Y. Pessary	July 12, 1870
99,770	Garland, John P., Newbury, Vt. Sleigh-knee	Feb. 15, 1870
106,808	Garland, Michael, West Eau Claire, Wis. Plane-guide	Aug. 30, 1870
99,181	Garlinghouse, Cyrus B., assignor to self, Samuel F. Bateman, and Byrdine Harris, Carpentersville, Ind. Hay-loader	Jan. 25, 1870
99,307	Garlington, J. L., Snapping Shoals, Ga. Apparatus for raising water	Feb. 1, 1870
105,935	Garlington, Thomas C., Chambers C. H., Ala. Cotton-seed planter	Aug. 2, 1870
108,249	Garner, Frank E., Cornwall, Conn. Feed-cutter	Oct. 11, 1870
3,926	Garnhart, John H., St. Louis, Mo. Bottle (Design)	Mar. 22, 1870
3,943	Same. Trade-mark (Design)	Mar. 29, 1870
109,608	Garretson, George E., Russellville, Ky. Elastic running-gear for carriages	Nov. 29, 1870
98,757	Garretson, O. S., Buffalo, N. Y. Cider-mill	Jan. 11, 1870
101,854	Same. Sash-pulley	April 12, 1870
107,897	Garretson, Oliver S. and Joel G., Buffalo, N. Y. Mop-head	Oct. 4, 1870
3,854	Garrett, George B., Philadelphia, Pa. Caster (Design)	Feb. 22, 1870
99,182	Garrett, Henry, Linneus, Mo. Drier	Jan. 25, 1870
108,900	Garrett, James H., Greencastle, Ind. Plate for harness-saddle	Nov. 1, 1870
	Garrett, Peter C., and Israel Snyder. (See Snyder & Garrett.)	
	Garrett, William, et al. (See Reece, William R., assignor.)	
104,013	Garrick, Thomas, Providence, R. I. Eyelet	June 7, 1870
104,442	Same. Machine for forming eyelet-stock	June 21, 1870
104,443	Same. Machine for feeding stock to eyelet-machines	June 21, 1870
	Garrigues, Richard H., administrator. (See Dole, L. A.) (Extension.)	
	Garrison, George B. (See Derrick, William E., assignor.)	
109,196	Garrison, Herod D., assignor to Garrison & Murray, Chicago, Ill. Mill for powdering roots, &c	Nov. 15, 1870
	Garrison, John W., and William C. Davis. (See Davis & Garrison.)	
100,747	Garrison, William, Clarkstown, N. Y. Mechanical movement	Mar. 15, 1870
	Garrison, William F., and William H. Guild. (See Hubbard & Conant, assignors) (Reissue.)	
	Garrus, Joseph. (See Semelé, Jules, assignor) (Two cases) (Design.)	
108,130	Garry, John, Cleveland, Ohio. Car-roof	Oct. 11, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,308	Garth, George S., Mill Hall, Pa. Straw-cutter. (Antedated Dec. 1, 1869).....	Feb. 1, 1870
109,197	Same.....same.....	Nov. 15, 1870
108,776	Garver, John W., and Oscar Bellman. (See Bellman & Garver.) Garvey, James, and Matthew H. Kimball, San Francisco, Cal. Clothes-line hook.....	Nov. 1, 1870
107,356	Garvin, Benjamin, and Rush J. Pettibone, Oshkosh, Wis. Tubular grate.....	Sept. 13, 1870
106,929	Gascon, Moses, Malvern, Ohio. Churn.....	Aug. 30, 1870
104,014	Gaskill, William, Philadelphia, Pa. Setting-up and tension-comb for knitting- machines.....	June 7, 1870
103,443	Gasten, John C., and Ralph Lawyer. (See Lawyer & Gaston.) Gaston, Jeremiah C., Cincinnati, Ohio. Button-fastening.....	May 24, 1870
104,444	Same.....Hand-stamp.....	June 21, 1870
104,445	Gates, Artemas W., New York, N. Y. Card-clothing.....	June 21, 1870
101,455	Gates, Frederick, assignor to William Gates, Vineland, N. J. Machinery for making paper boxes.....	April 5, 1870
107,478	Gates, Joel Hale, et al. (See Davis, Thomas Hale, assignor.) Gates, John, Portland, Oregon. Lubricator.....	Sept. 20, 1870
108,999	Same.....Plston-packing.....	Nov. 8, 1870
98,863	Gates, J. T., et al. (See Foster, Hickman E., assignor.) Gates, Reuben, Parma, Ohio. Saw-handle.....	Jan. 18, 1870
4,041	Gathright, John T., and John C. Freeman, assignors to John T. Gathright, Louisville, Ky. Side-saddle.....	June 21, 1870
3,988	Gathright, Joseph B., Louisville, Ky. Tree for side-saddles..... (Reissue).. Gathright, Joseph B., Louisville, Ky. Tree for side-saddles..... (Disclaimer).. Gatling, Richard J., Hartford, Conn. Metallic cartridge.....	May 24, 1870 Aug. 29, 1870 May 3, 1870
102,675	Gause, William, and Albert W. Cox. (See Cox & Gause.) Gause, William, Indianapolis, Ind., and Joseph C. Curryer, Thorntown, Ind. Gate.....	Nov. 15, 1870
102,109	Gautschi, Charles, and Charles Arlen. (See Arlen & Gautschi.) Gavard, Adonis Nicolas Cristin, France. Metallic cartridge.....	April 19, 1870
104,446	Gavron, Otto, New York, N. Y. Preparation of mineral bath to imitate mineral waters.....	June 21, 1870
108,250	Gay, Albert, and H. D. Lathrop. (See Lathrop & Gay.) Gay, David G., Eugene City, Oregon. Saw-mill.....	Oct. 11, 1870
108,251	Same.....Mail-bag fastener.....	Oct. 11, 1870
99,077	Gay, John. (See Crabtree, Jonathan, assignor.)..... (Three cases.) (Design.) Gay, Stephen. (See Smith, George Hamilton, assignor.) Gay, William A., Newark, N. J. Gravel-heater.....	Jan. 25, 1870
4,033	Gayle, Judson B., Raleigh, N. C. Grate..... (Design).. Gaylord, Charles, Washington, D. C. Hinge.....	May 17, 1870 Aug. 16, 1870
106,351	Gaylord, Charles, Washington, D. C. Hinge.....	Aug. 16, 1870
99,553	Gaylord, E. L., Terryville, Conn. Trunk-lock.....	Feb. 8, 1870
104,572	Same.....Padlock.....	June 21, 1870
108,582	Gaytes, Carol, Chicago, Ill. Wood-pavement.....	Oct. 25, 1870
98,487	Geahr, William, assignor to self and George Duchman, East Earl Township, Pa. Manure-drag.....	Jan. 4, 1870
106,685	Gear, Alonzo S., New Haven, Conn. Wood-molding machine..... Gear, A. S. and J. & Co. (See Jordan, Detrick, assignor.)..... (Three cases.) Gebhardt, Lewis L., North Providence, Ind. Medical compound.....	Aug. 23, 1870 Aug. 23, 1870
104,015	Geddes, William B., and Elisha Mets. (See Mets & Geddes.) Gee, John H., assignor to George T. Chapman, New York, N. Y. Thill-coupling.....	June 7, 1870
106,150	Gee, William, New York, N. Y. Lubricator.....	Aug. 9, 1870
106,686	Same.....Apparatus for cooling beer.....	Aug. 23, 1870
102,676	Geer, Emily L. (See Dinsmore, Warren A., assignor.) Geer, George, assignor to Charles Parker, Meriden, Conn. Match-safe.....	May 3, 1870
4,105	Geer, George, assignor to self, T. G. Hadley, and William Hamilton, Galesburg, Ill. Cherry-stoner..... (Reissue).. Geer, Willis S., Marshall, Mich. Thill-coupling.....	Aug. 23, 1870 Aug. 23, 1870
106,687	Gehlen, Louis, New York, N. Y. Handle for folding umbrellas.....	Mar. 8, 1870
100,522	Geiselman, Daniel, et al. (See Martin & Offineer, assignors.) Geiser, Peter, and L. P. Thompson; said Thompson assignor to said Geiser, Waynesborough, Pa. Machine for tonguing and grooving.....	Aug. 30, 1870
100,999	Geiss, Adolph, Buffalo, N. Y. Railway-car coupling.....	Mar. 22, 1870
103,252	Geiss, Jacob, Belleville, Ill. Truss.....	Oct. 11, 1870
109,000	Geller, William, New York, N. Y. Composition for pencils.....	Nov. 8, 1870
109,609	Gemberling, Elijah, Elkhart, Ind. Gate.....	Nov. 29, 1870
106,352	Gentner, Frederick. (See Bauschliker, Frederick, assignor.) Gentsch, Ludwig, and Stockton H. Evans. (See Evans & Gentsch.) (Reissue.) George, David J., assignor to self, Mary R. George, and George G. F. Boswell, Arcade, Ind. Oven.....	Aug. 16, 1870
108,583	George, Richard, England. Gas-heater.....	Oct. 25, 1870
106,047	George, Robert, Denver City, Col. Ter. Machine for separating mineral and fossil substances.....	Aug. 2, 1870
106,048	Same.....Machine for separating and concentrating ores and other materials of different specific gravity.....	Aug. 2, 1870
106,049	Same.....Apparatus for separating and concentrating ore.....	Aug. 2, 1870
105,064	George, Robert W., Boston, Mass. Stave-jointer.....	July 5, 1870
108,584	George, William Freeman, New York, N. Y. Putting up soap. (Antedated Oct. 8, 1870).....	Oct. 25, 1870
104,297	Gephart, Jacob C., Dowagiac, Mich. Bag-filler for fanning-mills.....	June 14, 1870
103,444	Geraghty, Michael F., assignor to Thomas J. McArthur and Isaac W. Parmen- ter, Jersey City, N. J. Sewing-machine.....	May 24, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,353	Gerard, George L., New Haven, Conn. Table-leaf supporter.....	Aug. 16, 1870
4,146	Same.....same.....(Reissue).....	Oct. 4, 1870
103,868	Gerrard, John, Trenton, N. J. Lock.....	June 7, 1870
	Gerber, Julius. (See Smith, Irulus R., assignor).....(Reissue.)	
106,478	Gerber, Julius, Rockford, Ill. Cultivator.....	Aug. 16, 1870
108,471	Same.....same.....	Oct. 18, 1870
110,037	Gerdes, Frederick W., Allegheny City, Pa. Manufacture of paint.....	Dec. 13, 1870
102,391	Gerdorn, Gregory, New York, N. Y. Lubricator.....	April 26, 1870
103,170	Gerdorn, Gregory, Albany, N. Y. Lubricator.....	May 17, 1870
	Gerecke, Henry. (See Murray, Edgar, assignor.)	
103,039	Gerecke, Henry, assignor to self, Augustus Gerecke, and Jacob Stahl, Carlstadt, N. J. Fruiting-tongs.....	May 17, 1870
98,949	Gerelds, Sela W., Worcester, Mass. Putty-knife.....	Jan. 18, 1870
100,280	Gerhard, M., Newark, N. J. Vegetable-cutter.....	Mar. 1, 1870
99,554	Gerhardt, William, assignor to self, Thomas Daffin, and Thomas Banes, New York, N. Y. Gas-producing furnace.....	Feb. 8, 1870
98,582	Gerhart, John H., and Joseph S. McCord, Middletown, Pa. Stove-pipe shelf.....	Jan. 4, 1870
110,028	Germain, George C., Cuyahoga Falls, Ohio. Pipe-coupling.....	Dec. 13, 1870
	Germain, Rollin, <i>et al.</i> (See Westcott, Charles S., assignor.)	
104,573	Gerner, Henry, New York, N. Y. Apparatus for utilizing the exhaust-steam of steam-engines.....	June 21, 1870
4,186	Gerner, Henry, assignor to American Gerner Boiler Company, New York, N. Y. Steam-generator.....(Reissue).....	Nov. 29, 1870
103,171	Gernes, Charles, and John H. Gruenhagen, Winona, Minn. Stump-extractor.....	May 17, 1870
110,353	Gerongross, Stephan, St. Louis, Mo. Breech-loading fire-arms.....	Dec. 20, 1870
	Gerow, Henry S. (See Jarrold, Edgar T., assignor.)	
98,685	Gerrard, Frank, Kansas City, Mo. Water-supply pipes for locomotives.....	Jan. 11, 1870
105,936	Gerrish, William H., Boston, Mass. Reed musical instrument.....	Aug. 2, 1870
107,898	Gesner, John F., West Farms, N. Y. Manufacture of ice.....	Oct. 4, 1870
105,667	Gessert, George, Edwardsville, Ill. Flour-sifter.....	July 26, 1870
102,532	Getzendaner, Marshall A., Polo, Ill. Corn-harvester.....	May 3, 1870
	Geyer, Richard B. (See Morgan, William H., assignor).....(Three cases.)	
103,040	Ghihi, Joseph, Italy. Propelling vessel.....	May 17, 1870
104,574	Gibbons, Thomas P., Philadelphia, Pa. Fruit-jar.....	June 21, 1870
102,803	Gibbs, Charles Edward, Boston, Mass. Comb-cleaner.....	May 10, 1870
104,298	Gibbs, Edwin, Richland Centre, Wis. Plate-lifter.....	June 14, 1870
99,309	Gibbs, John, assignor to self and Calvin H. Carter, Brooklyn, E. D., N. Y. Punch and die for punching tubes.....	Feb. 1, 1870
108,699	Gibbs, Martin L., Canton, Ohio. Plow.....	Oct. 25, 1870
107,037	Gibbs, Robert, Brunswick, Mo. Plow.....	Sept. 6, 1870
105,797	Gibbs, William H., Philadelphia, Pa. Bottle-stopper.....	July 26, 1870
99,428	Gibson, C. D. P., Boston, Mass. Attaching the main-spring of watches.....	Feb. 1, 1870
101,607	Gibson, Charles T., assignor to self and Samuel E. Kirk, Baltimore, Md. Pad-lock. (Antedated March 29, 1870).....	April 5, 1870
	Gibson, George M., <i>et al.</i> (See Marden, Jeremiah A., assignor.)	
108,901	Gibson, Lyman B., South Addison, N. Y. Stump-extractor.....	Nov. 1, 1870
4,012	Gibson, Paris, and Alexander Tyler, Minneapolis, Minn. Trade-mark..(Design). Gibson, Thomas Emerson, and Thomas Rose. (See Rose & Gibson.)	May 10, 1870
103,016	Gibson, Samuel, assignor to self and I. W. G. Wierman, Lancaster, Pa. Rotary engine.....	Oct. 4, 1870
	Gibson, W. T. (See Donovan, Eliza Jane, assignor.)	
104,299	Giddings, Erastus W., Johnstown, Pa. Window.....	June 14, 1870
103,131	Gies, Christian, New York, N. Y. Sash-cord fastener.....	Oct. 11, 1870
99,555	Gifford, C. H., Potsdam Junction, N. Y. Horse-power.....	Feb. 8, 1870
	Gifford, Ira M., <i>et al.</i> (See Harrah, Gifford & Johnston.)	
108,777	Gifford, Thomas J., Salem, Mass. Spring-seat for railway-cars.....	Nov. 1, 1870
102,804	Gifford, Walter C., Jamestown, N. Y. Stanchion for cattle.....	May 10, 1870
105,445	Same.....Swinging-stanchion.....	July 19, 1870
	Gigon, Gustavus. (See Humbert, Alfred, assignor.)	
103,600	Gilbert, Charles W., Worcester, Mass. Loom.....	May 31, 1870
	Same.....(See Bleakie, Robert, assignor.)	
108,472	Gilbert, Edward F., Lyons, N. Y. Bedstead-fastening.....	Oct. 18, 1870
107,771	Gilbert, Harlow M., Ada, Ill. Coffee-roaster.....	Sept. 27, 1870
98,950	Gilbert, Joseph, Philadelphia, Pa. Portable water-closet.....	Jan. 18, 1870
106,809	Gilbert, Lucien M., Cow Run, Ohio. Loom.....	Aug. 30, 1870
99,663	Gilbert, Rufus H., Washington, D. C. Atmospheric transportation.....	Feb. 8, 1870
99,876	Same.....Blowing-apparatus.....	Feb. 15, 1870
99,664	Gilbert, Thomas S., Birmingham, Conn. Corset.....	Feb. 8, 1870
109,815	Gilbert, William, Detroit, Mich. Perpetual brick-burning kiln.....	Dec. 6, 1870
108,700	Gilbert, William, assignor to N. K. Fairbank, Catskill, N. Y. Wooden box.....	Oct. 25, 1870
	Gilbert, William F., and Fred. Durand. (See Durand & Gilbert.)	
103,733	Gilchrist, James N., assignor to self and John L. Gilchrist, Connorsville, Ind. Blower.....	May 31, 1870
106,050	Giles, Abner R., Adams, N. Y. Carriage-jack.....	Aug. 2, 1870
3,885	Giles, Fayette S., assignor to Giles, Wales & Co., New York, N. Y. Top-plate, barrel-bridge, and cock for watches.....(Design).....	Mar. 8, 1870
3,886	Same.....Barrel-bridge, ratchet cap-base, and arbor-cup for watches. (Design).....	Mar. 8, 1870
99,556	Giles, Henry G., Troy, N. Y. Fastening stove-door linings. (Antedated Feb. 5, 1870).....	Feb. 8, 1870
101,000	Same.....Base-burning stove.....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,001	Giles, Henry G., Troy, N. Y. Base-burning stove .....	Mar. 22, 1870
102,533	Same.....Cooking-stove.....	May 3, 1870
	Same.....( <i>See</i> Kingsbury, Gilbert J., assignor.) (Reissue.)	
106,051	Gill, George, Taunton, Mass. Stand and waiter .....	Aug. 2, 1870
3,872	Gill, George, assignor to Reed & Barton, Taunton, Mass. Tea-service..(Design)	Mar. 1, 1870
3,989	Same.....Cake-dish.....(Design)	April 26, 1870
110,131	Gill, Henry, Mansfield, Ohio. Grain thrasher and separator .....	Dec. 13, 1870
106,574	Gillert, Ernest, St. Louis, Mo. Vapor-burner .....	Aug. 23, 1870
101,118	Gilles, Ernst W., and Jules Wendell, assignors of one-third interest to Abraham P. Grant, Oswego, N. Y. Folding-desk .....	Mar. 22, 1870
101,117	Gillespie, Hoffman D., Huntington, Ind. Sawing-machine .....	Mar. 22, 1870
101,255	Gillespie, James E., and Horatio B. Weaver, Hartford, Conn. Water-wheel .....	Mar. 22, 1870
104,136	Gillespie, Joseph W., and William Hughes, assignors to selves and Isaac N. Webb, Alliance, Ohio. Combined grate-front and oven .....	June 14, 1870
102,249	Gillet, Henry E., assignor to self and E. Bickford, Oswego, N. Y. Folding-desk .....	April 26, 1870
99,557	Gillette, C. F., Sparta, Wis. Gun-wiper .....	Feb. 8, 1870
104,016	Gilliland, Lewis L., Dayton, Ohio. Fruit-box .....	June 7, 1870
107,609	Gilliland, Robert, Hudson, Mich. Nut-lock .....	Sept. 20, 1870
3,914	Gillinder, William T., Philadelphia, Pa. Ornamenting glass-ware..(Design)	Mar. 22, 1870
110,029	Same.....Machine for mixing "batch" for glass .....	Dec. 13, 1870
102,805	Gillispie, John N., Waltham, Mass. Device for hanging picture-frames, &c .....	May 10, 1870
104,137	Gilman, Albert H., Boston, Mass. Loom-temple .....	June 14, 1870
4,094	Same.....Spindle for spinning.....(Reissue)	Aug. 9, 1870
102,534	Gilman, Jane E., Hartford, Conn. Work-holder .....	May 3, 1870
107,479	Same.....Combined dressing-bureau and bath-tub .....	Sept. 20, 1870
101,002	Gilman, L. D., Lansingburgh, N. Y. Stop-valve .....	Mar. 22, 1870
102,806	Gilman, Samuel H., Galveston, Texas. Refining and aging liquors .....	May 10, 1870
104,138	Same.....Treating grain to obtain extractive matter for coloring and flavoring spirits .....	June 14, 1870
100,748	Gilman, William, Ottawa, Ill. Corn-planter .....	Mar. 15, 1870
105,668	Same.....Machine for rolling plow-beams .....	July 26, 1870
107,357	Same.....Corn-cultivator .....	Sept. 13, 1870
98,686	Gilmore, Othniel, Raynham, Mass. Water-meter .....	Jan. 11, 1870
108,344	Same.....same .....	Oct. 18, 1870
100,137	Gilpatric, C. L., Hyde Park, Mass. Strainer for coffee-pots .....	Feb. 22, 1870
109,199	Gilpin, Charles, Cumberland, Md. Feed-rolls for rossing-machines .....	Nov. 15, 1870
98,758	Gilroy, W. L., Philadelphia, Pa. Process of preserving green corn. (Antedated Jan. 1, 1870) .....	Jan. 11, 1870
103,734	Gilson, John, assignor to Gordon McKay, trustee, Stoneham, Mass. Machine for heeling boots and shoes .....	May 31, 1870
105,564	Gilson, Leonard, assignor to self and E. Stone Goodwin, Boston, Mass. Hand-truck .....	July 19, 1870
103,869	Gilson, Samuel D., Syracuse, N. Y. Rotary engine .....	June 7, 1870
103,701	Same.....Evaporating-apparatus .....	Oct. 25, 1870
100,749	Giraudat, Ambrose, New York, N. Y. Machine for stamping lace-paper .....	Mar. 15, 1870
102,110	Same.....Wire-covering machine .....	April 19, 1870
102,111	Gird, Edward D., Syracuse, N. Y. Screw-propulsion for tug-boats .....	April 19, 1870
109,816	Same.....Sewing-machine for making puffing .....	Dec. 6, 1870
107,358	Girdlestone, Henry J. and John W., assignors to the Earth-Closet Company, England. Earth-closet .....	Sept. 13, 1870
	Girdlestone, Henry John and Henry Moule. ( <i>See</i> Moule & Girdlestone. (Two cases) .....	
108,585	Girdlestone, John Ward, England. Preventing the deviation of ships' compasses .....	Oct. 25, 1870
107,359	Gire, John, Sipton, Ill. Combined cultivator and grain-drill .....	Sept. 13, 1870
108,902	Giroud, Victor, assignor to John M. Dow, New York, N. Y. Apparatus for operating sewing-machines .....	Nov. 1, 1870
110,030	Giroux, Benjamin, Chicago, Ill. Mode of attaching boot and shoe heels .....	Dec. 13, 1870
108,903	Glad, George H., and John C. Becker, Boston, Mass. Wagon-axle .....	Nov. 1, 1870
100,614	Gladding, George S., Chester, Conn. Cord-holder for windows, &c .....	Mar. 8, 1870
109,888	Gladding, James W., Normal, Ill. Bee-hive .....	Dec. 6, 1870
	Glathe, Herman. ( <i>See</i> Kluck, Martin M., assignor.)	
107,480	Glas, Anton Joseph, England. Apparatus for decorticating, separating, and drying grain, &c. (Patented in England, December 17, 1869) .....	Sept. 20, 1870
109,001	Glass, William, Brooklyn, N. Y. Laterally-sliding throttle-valve .....	Nov. 8, 1870
107,247	Glasser, Francis, Mystic Bridge, Conn. Clamp .....	Sept. 13, 1870
	Glazier, Theodore C. ( <i>See</i> Plagge, Charles, assignor.)	
	Same.....( <i>See</i> Weld, Edwin, assignor.)	
105,192	Gleason, Joel, Whitestone, N. Y. Sad-iron handle .....	July 12, 1870
104,844	Gleason, Milford, Mass. Stove .....	June 28, 1870
101,119	Gleason, William B., Boston, Mass. Composition handle or pull .....	Mar. 22, 1870
101,995	Gleim, John H., Tipton, Mo. Pump-spout .....	April 19, 1870
	Glen & Hall Manufacturing Company. ( <i>See</i> Smeed, William, assignor.)	
	Glen & Wright. ( <i>See</i> Utley, Grey, assignor.)	
101,996	Glendinning, D. W., Detroit, Mich. Turbine water-wheel .....	April 19, 1870
103,889	Gleim, Charles, Allegheny City, Pa. Spring bed-bottom .....	Dec. 6, 1870
	Glenn, Joshua B. ( <i>See</i> Spencer, George H., assignor.) .....	
107,899	Glick, Francis, and Uriah Keck, Allentown, Pa. Grate .....	Oct. 4, 1870
103,735	Gladen, Charles W., assignor to Gordon McKay, trustee, Lynn, Mass. Machine for heeling boots .....	May 31, 1870
101,608	Glinnsdal, M. T., Rockford, Ill. Brick-mold .....	April 5, 1870
	Globe Sewing Machine Company. ( <i>See</i> Meyers, Nicholas, assignor.)	
	Same.....same.....(Reissue.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,445	Glover, John Jefferson, Quincy, Mass. Picture-poise .....	May 24, 1870
	Glover, Otis R., and Milo A. Cushing. (See Cushing & Glover.) .....	
106,264	Glover, Thomas, assignor to Morris, Tasker & Co., Philadelphia, Pa. Molding-machine .....	Aug. 9, 1870
108,586	Glover, Winslow B., Boston, Mass. Plane .....	Oct. 23, 1870
98,583	Gluck, William, Baltimore, Md. Automatic coal-sifter .....	Jan. 4, 1870
109,200	Gnan, Joseph and William, Louisville, Ky. Clothes-drier .....	Nov. 15, 1870
	Goble, George, <i>et al.</i> , (See Brokenshire, John, assignor.) (Two cases.) (Reissue.) .....	
107,038	Gockley, Henry L., Jackson, Ill. Hay-loader .....	Sept. 6, 1870
	Goddard, E., and S. M. Perry. (See Perry & Goddard, assignors.) .....	
4,072	Goddard, Emerson, assignor to Thomas P. Milligan and Thomas Higgins, New York, N. Y. Manufacture of glue .....	July 12, 1870
	Goddard, Thomas. (See Clingen, Robert, assignor.) .....	
	Godfrey, Cornelius. (See Lighthall, Reuben, assignor) .....	(Reissue.)
109,508	Same..... New York, N. Y. Protecting iron against corrosion .....	Nov. 22, 1870
109,002	Godfrey, James P., Manchester, N. H. Roofing-composition .....	Nov. 8, 1870
101,256	Godfrey, Joseph S., assignor to self and Sears M. Loveridge, Leslie, Mich. Plow .....	Mar. 29, 1870
105,446	Same .....	July 19, 1870
98,687	Godfrey, S. T., Seaville, N. J. Potato-planter .....	Jan. 11, 1870
107,677	Godown, Charles W., Lambertville, N. J. Sewing-machine .....	Sept. 27, 1870
	Godsbalk, Abraham. (See Eberly, John A., assignor.) .....	
101,257	Godwin, Joshua B., Williamston, N. C. Cotton-seed and corn planter .....	Mar. 29, 1870
104,729	Goff, Marcellus B., Delavan, Wis. Corn-plow .....	June 23, 1870
	Gold and Stock Telegraph Company. (See Laws, Samuel S., assignor.) .....	
	Same..... (See Calahan, Edward A., assignor) .....	(Reissue.)
	Same..... (See Baker, Henry N., assignor.) .....	
	Same..... (See Edison, Thomas A.) .....	(Two cases.)
	Gold, Stephen J., West Cornwall, Conn. Apparatus for heating buildings by steam .....	Jan. 13, 1870
104,575	Golden, William, Flint, Mich. Beer-funnel .....	June 21, 1870
100,883	Goldman, Elisha H., Clayton, Ind. Automatic boiler-feeder .....	Mar. 15, 1870
103,446	Goldman, Elisha H., and David W. Hisey, Kansas, Ill. Door-bell .....	May 24, 1870
110,227	Goldsborough, John, Philadelphia, Pa. Stamp-canceled .....	Dec. 20, 1870
101,855	Goldsmith, Gustavus Adolphus, New York, N. Y. Paper collar .....	April 12, 1870
	Goldsmith, Nathan, and Solomon Rose. (See Rose & Goldsmith.) .....	
	Goldthorp, Samuel H., and George Lowen. (See Lowen & Goldthorp.) .....	
108,346	Goldthwait, Charles, South Weymouth, Mass. Match-safe .....	Oct. 18, 1870
108,345	Goll, Henry A., Chicago, Ill. Safety-valve .....	Oct. 18, 1870
108,347	Golladay, Jacob H., assignor to self and J. W. Whidden, New Lisbon, Ohio. Clover-hulling attachment to thrashing-machines .....	Oct. 18, 1870
99,558	Goller, John, Los Angeles, Cal. Vehicle-spring .....	Feb. 8, 1870
103,041	Same..... Thorough-brace spring .....	May 2, 1870
99,078	Gomez, Edwin, New York, N. Y. Cartridge .....	Jan. 23, 1870
99,079	Same .....	Jan. 23, 1870
99,665	Same..... Exploding compressed powder .....	Feb. 8, 1870
99,666	Same..... Metallic cartridge .....	Feb. 8, 1870
100,884	Same..... Torpedo and cartridge .....	Mar. 15, 1870
102,250	Same..... Tamping-plug for blasting .....	April 26, 1870
100,281	Gommenginger, Bartholomew, Rochester, N. Y. Hot-air furnace .....	Mar. 1, 1870
99,080	Gooch, Charles, Cincinnati, Ohio. Cork-extractor .....	Jan. 25, 1870
99,997	Good, Adam, jr., Titusville, Pa. Pump-rod coupling .....	Feb. 15, 1870
103,447	Same..... Adjustable connection of sucker-rods to walking-beams .....	May 24, 1870
104,576	Same..... Sucker-rod joint .....	June 21, 1870
103,473	Good, John, Brooklyn, N. Y. Chain .....	Oct. 18, 1870
101,003	Goodaire, William, and George Stead, assignors to Orander J. Benham, Cleveland, Ohio. Restoring waste alkali used in oil-refineries .....	Mar. 22, 1870
110,228	Goodale, John, Boston, Mass. Toy-gun. (Antedated Dec. 9, 1870) .....	Dec. 20, 1870
	Goodell, Anthony W., and Thomas W. Johnson, jr. (See Johnson & Goodell.) .....	
102,934	Goodell, D. H., Antrim, N. H. Fork for peach-parers .....	May 10, 1870
	Goodell, Joseph H., Logansport, Ind. Machine for cutting veneers from the log .....	(Extension)
109,610	Gooden, John, Lockport, N. Y. Polishing-machine. (Antedated Nov. 26, 1870) .....	Nov. 29, 1870
98,759	Goodenough, M. A., New York, N. Y. Feather duster .....	Jan. 11, 1870
98,951	Goodes, E. A., assignor to the Philadelphia Patent and Novelty Company, Philadelphia, Pa. Thrashing-machine .....	Jan. 18, 1870
104,577	Same..... Combined rule, level, clinometer, &c. .....	June 21, 1870
106,688	Goodfellow, John H., Troy, N. Y. Cooking-stove .....	Aug. 23, 1870
100,138	Goodfellow, John H., assignor to self and R. S. Goodfellow, Troy, N. Y. Base-burning stove .....	Feb. 22, 1870
107,248	Same..... Bias-cutter .....	Sept. 13, 1870
102,507	Goodfellow, John H., and Martin Russell, jr., Troy, N. Y. Match-box .....	May 10, 1870
	Goodhue, David P., <i>et al.</i> (See Squires & Clinton, assignors.) .....	
103,253	Goodier, John, Philadelphia, Pa. Truss .....	Oct. 11, 1870
102,112	Goodman, Allen and Hardin, Williamsburgh, Mo. Sawing-machine .....	April 19, 1870
110,031	Goodman, Edward S., New Orleans, La. Hand-stamp .....	Dec. 13, 1870
106,052	Goodman, Henry A., assignor to self and Ernest Voor Jcinsen, Omaha, Nebr. Car-brake .....	Aug. 2, 1870
103,448	Goodman, Horatio N., Syracuse, N. Y. Organ .....	May 24, 1870
109,003	Same..... Reed-organ .....	Nov. 8, 1870
99,559	Goodman, O. P., Chillicothe, Ohio. Nose-ring for hogs .....	Feb. 8, 1870
110,563	Goodman, William, Boston, Mass. Car-wheel .....	Dec. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,258	Goodnow, George B., Detroit, Mich. Saw.....	Mar. 29, 1870
	Goodrich, A. E. (See Guthrie, Alfred, assignor.)	
	Goodrich, E. D. (See Williams, Turner, assignor.)	
	Goodrich, E. D., <i>et al.</i> (See Earl & Dearborn, assignors.)	
104,017	Goodrich, Harry C., Chicago, Ill. Embroidering attachment for sewing-machines.....	June 7, 1870
106,151	Same.....Tuck-creasing attachment for sewing-machines.....	Aug. 9, 1870
	Goodrich, James W., <i>et al.</i> (See Bemis, Foth, & Goodrich.)	
104,447	Goodrich, William R., Whitestown, N. Y. Latch for gates.....	June 21, 1870
4,310	Same.....Utica, N. Y. Coat and hat hook..... (Design).....	Aug. 30, 1870
109,405	Goodrich, William W., Rondout, N. Y. Anchor-beam support for brick walls.....	Nov. 22, 1870
99,560	Goodsell, George D., and Noyes E. Babcock, Rockford, Ill. Corn-stalk cutting-knife.....	Feb. 8, 1870
103,601	Same.....Bread-cutter.....	May 31, 1870
	Same.....(See Babcock & Goodsell.)	
	Goodsell, Samuel R., and John Q. Adams. (See Adams & Goodsell.)	
108,348	Goodwillie, David, Chicago, Ill. Window and door screen.....	Oct. 13, 1870
	Goodwin, Benjamin S., <i>et al.</i> (See McGill, John, assignor.)	
99,561	Goodwin, Caleb, Chicago, Ill. Scientific playing-cards.....	Feb. 8, 1870
	Goodwin, Charles Rhodes. (See Ulmann, Gustave, assignor.)	
	Goodwin, E. Stone. (See Gilson, Leonard, assignor.)	
109,201	Goodwin, Lawson S., Toronto, Ind. Bee-hive.....	Nov. 15, 1870
98,488	Goodwin, Richard H., Boston, Gideon L. Gamage, Lynn, Mass., and Richard J. P. Goodwin, Manchester, N. H. Guard for carriage-steps.....	Jan. 4, 1870
	Goodwin, William C. (See Taylor, Edwin L., assignor.)	
4,368	Goodwin, William C., Hamden, Conn. Figure of a mechanical toy .. (Design) ..	Sept. 27, 1870
4,369	Same.....Mechanical-toy figure..... (Design).....	Sept. 27, 1870
4,370	Same.....Figure of a mechanical toy..... (Design).....	Sept. 27, 1870
101,004	Goodwin, William F., Metuchen, N. J. Propelling canal-boats.....	Mar. 22, 1870
101,005	Same.....Washing-machine.....	Mar. 22, 1870
101,120	Same.....Harvester.....	Mar. 22, 1870
101,856	Same.....Churn.....	April 12, 1870
98,760	Goodwin, William F., assignor to self, James T. and George W. Sanford. Metuchen, N. J. Propelling boats on canals.....	Jan. 11, 1870
100,232	Goodwyn, George W. W., New Orleans, La. Compressed-air cylinder.....	Mar. 1, 1870
100,523	Goodwyn, John W., Petersburg, Va. Process of pulping and bleaching paper-stock. (Antedated Feb. 26, 1870.).....	Mar. 8, 1870.
	Goodyear, Leverett F. (See Elliott, William P., assignor.) (Two cases.)	
99,429	Goodyear, R. A., Binghamton, N. Y. Ventilator.....	Feb. 1, 1870.
	Goodyear's India Rubber Glove Manufacturing Company. (See Hotchkiss, Burritt M., assignor.)	
	Same.....same.	
107,481	Gordon, Charles M., La Porte, Ind. Plow.....	Sept. 20, 1870.
110,132	Gordon, James W. W., Newport, Ky. Treadle for sewing-machines.....	Dec. 13, 1870.
99,771	Gordon, Lewis L., Detroit, Mich. Wagon-spring.....	Feb. 15, 1870.
99,772	Gordon, Lewis L., assignor to Richard W. Hutchinson, Detroit, Mich. Mop-wringer and scrubbing-brush.....	Feb. 15, 1870.
107,249	Gordon, Matthew W., assignor to self and James S. Gordon, Foster's Crossing, Ohio. Apparatus for moving buildings.....	Sept. 13, 1870.
4,276	Gordon, Robert, Peoria, N. Y. Spool-stand..... (Design).....	Aug. 9, 1870
	Gordon, Thomas, <i>et al.</i> (See Averell, Higgins & Gordon, assignors.)	
104,573	Gore, Henry A., Goshen, Ind. Machine for rounding and dressing irregular and regular forms.....	June 21, 1870.
106,931	Same.....Machine for rounding felloes for wheels.....	Aug. 30, 1870.
103,870	Gore, Myron, Batavia, Ill. Boiler.....	June 7, 1870.
	Gorham Manufacturing Company. (See Wilkinson, George, assignor.) (Four cases)..... (Design).....	
102,535	Gorham, M. L., Rockford, Ill. Seeding-machine. (Antedated April 29, 1870.).....	May 3, 1870.
106,575	Gorham, William H. H., and Burrett H. Williams, Greenwich, Ohio. Churn-dasher.....	Aug. 23, 1870.
110,032	Gorman, John, Portland, Me. Tympan-sheet for printing-presses.....	Dec. 13, 1870
4,160	Gorman, William, New Britain, Conn. Sash-fastener..... (Design).....	June 21, 1870.
3,873	Gorman, William, assignor to Russell and Erwin Manufacturing Company, New Britain, Conn. Outside-door latch..... (Design).....	Mar. 1, 1870
3,915	Same.....Drawer-pull..... (Design).....	Mar. 22, 1870.
3,916	Same.....Escutcheon for doors..... (Design).....	Mar. 22, 1870
4,034	Same.....Face-plate for locks for sliding-doors..... (Design).....	May 17, 1870.
4,335	Same.....Cupboard-latch..... (Design).....	Sept. 6, 1870.
108,778	Same.....Sash-fastener.....	Nov. 1, 1870
4,474	Same.....Car-lock..... (Design).....	Nov. 15, 1870.
100,885	Gorton, Daniel J., assignor to self and W. E. Gorton, West Eau Claire, Wis. Pump.....	Mar. 15, 1870.
105,327	Gorton, Robert B., Niantic, Conn. Stove-pipe shelf.....	July 12, 1870
106,810	Goslee, Ozias W., Glastenbury, Conn. Tobacco-ridger.....	Aug. 30, 1870.
107,772	Gotham, James M., assignor to self and Lewis Devlin, Blackstone, Mass. Picker-collar.....	Sept. 27, 1870.
101,857	Gottstein, Peter R., Houghton, Mich. Candle for miners' use.....	April 12, 1870
105,669	Gouch, Lyman A., Yonkers, N. Y. Vapor-burner.....	July 26, 1870.
107,482	Gould, Charles H., assignor to self and William Lumb, Boston, Mass. Shield for carriage-steps.....	Sept. 20, 1870.

## Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
107,173	Gould, Charles S., and Joseph King. ( <i>See King &amp; Gould, assignors.</i> )	
98,688	Gould, Demon R., and Warren S. Wickham, assignors to selves and Nelson B. Mallory, Chestertown, N. Y. Spring-carriage.....	Sept. 6, 1870
102,251	Gould, E. J., Milwaukee, Wis. Globe-valve.....	Jan. 11, 1870
109,406	Gould, Franklin, assignor to self and William C. Gould, Paterson, N. J. Vapor-burner.....	April 26, 1870
98,761	Gould, Jacob H., assignor to self and John J. Campbell, Burlingham, Ohio. Vehicle-spring.....	Nov. 22, 1870
99,877	Gould, Joseph, Grinnell, Iowa. Bee-hive.....	Jan. 11, 1870
106,811	Gould, Roscoe J., Newark, N. J. Pump.....	Feb. 15, 1870
100,615	Gould, Warren H., Manchester, N. H. Milk-cooler.....	Aug. 30, 1870
101,006	Goulding, William F., Providence, R. I. Harvester-rake.....	Mar. 8, 1870
109,004	Goullioud, Alphonse, Spain. Loom for weaving irregular fabrics.....	Mar. 22, 1870
102,808	Govan, Alexander, and Charles M. Atkins. ( <i>See Govan &amp; Atkins.</i> )	
110,564	Gove, Morrill C., Lowell, Mass. Steam-trap.....	Nov. 8, 1870
102,808	Gowen, James E., assignor to self and Charles H. Wetherell, Stoneham, Mass. Feeding-mechanism for sewing-machines.....	May 3, 1870
102,252	Gowen, John Emery, Boston, Mass. Apparatus for raising vessels.....	Dec. 27, 1870
99,081	Graber, D., et al. ( <i>See Fessler &amp; Jones, assignors.</i> )	
103,313	Grace, Frederick J., Coytesville, N. J. System of telegraphing.....	April 26, 1870
102,809	Gracie, John, Pittsburgh, Pa. Still for hydrocarbon and other substances.....	Jan. 25, 1870
105,193	Graessle, Gottlieb, assignor to self and L. E. White, Hamilton, Ohio. Brick-mold.....	Nov. 15, 1870
	Graf, George S., Pittsburgh, Pa. Bureau.....	May 10, 1870
	Graffam, Isaiah W., New Bedford, Mass. Washing-machine.....	July 12, 1870
	Graffin, S. D., et al. ( <i>See Miller &amp; Kersting.</i> )	
101,361	Graham, A. D. ( <i>See Kearney, William, assignor.</i> )	
100,283	Graham, Ann L. H., Chester, Pa. Broiler.....	Mar. 29, 1870
	Graham, Christopher, New York, N. Y. Breast-plate for the breast-collar of double-harness.....	Mar. 1, 1870
	Graham, E. G. ( <i>See Swift, George W., assignor.</i> )	
	Graham, George H., and H. H. Taylor. ( <i>See Taylor &amp; Graham.</i> )	
	Graham, George H., and Alvin C. Beckwith. ( <i>See Beckwith &amp; Graham.</i> )	
	Graham, H. J., et al. ( <i>See Pattee &amp; Nye, assignors.</i> )	
102,113	Graham, James Lorimer. ( <i>See Wurtz, Henry, assignor.</i> ).....(Four cases.)	
106,354	Graham, John, New York, N. Y. Fly-net for horses.....	April 19, 1870
107,360	Graham, John H. ( <i>See Roberts, George W., assignor.</i> )	
101,726	Graham, John L., Bentley Station, Ill. Cultivator.....	Aug. 16, 1870
	Graham, Simon P., Columbus, Ohio. Carriage.....	Sept. 13, 1870
	Graham, Thomas, Shamburgh, Pa. Swivel for temper-screws.....	April 12, 1870
	Graham, William, and Edwin B. Roberts. ( <i>See Roberts &amp; Graham.</i> )	
	Graham, William W., and Thomas Ross. ( <i>See Ross &amp; Graham.</i> )	
	Grahamite Asphalt Company. ( <i>See De Smedt, E. G., assignor.</i> )... (Two cases.)	
108,792	Grandjean, Pierre, France. Railroad-car heater.....	Oct. 25, 1870
100,284	Grandjon, Joseph, France. Violin.....	Mar. 1, 1870
103,874	Grandy, Cyrus E., assignor to S. Heald & Sons, Upton, Mass. Head-block for saw-mills.....	June 7, 1870
	Grannan, J. C. ( <i>See Davis, James N., assignor.</i> )	
	Grant, Abraham P. ( <i>See Gilles &amp; Wendell, assignors.</i> )	
107,610	Same..... ( <i>See King, George W., assignor.</i> )	
101,456	Grant, John James, assignor to self and Luther C. Pratt, Greenfield, Mass. Machine for drilling and cutting screw-threads.....	Sept. 20, 1870
103,172	Grassau, Karl, Virginia City, Nev. Lasting-machine.....	April 5, 1870
108,254	Grassler, William F., Muncy, Pa. Railway-car coupling.....	May 17, 1870
106,479	Same..... Car-coupling.....	Oct. 11, 1870
100,616	Graupner, Franz, Evansville, Ind. Composition to be used in dyeing.....	Aug. 16, 1870
101,609	Gravatt, Charles T., Philadelphia, Pa. Door-retainer.....	Mar. 8, 1870
107,361	Graves, Almeron, Roscoe, Ill. Revolving-swing.....	April 5, 1870
110,454	Graves, George W., Chicago, Ill. Harness-pad.....	Sept. 13, 1870
	Graves, Jacob and Henry, Boston, Mass. Incubator.....	Dec. 27, 1870
	Graves, James, and Abel D. Cook. ( <i>See Cook &amp; Graves.</i> )	
108,349	Graves, James T., Wilson, N. C. Cotton-seed and guano distributer.....	Oct. 18, 1870
108,255	Grawitz, Charles, Buffalo, N. Y. Rocking-chair.....	Oct. 11, 1870
103,602	Gray, Gardner B., et al. ( <i>See Simpson, Gray &amp; Romans.</i> )	
100,285	Gray, George F., Brooklyn, N. Y. Apparatus for evaporating liquids.....	May 31, 1870
110,565	Gray, James H., Boston, Mass. Wick-tube for lamps. (Antedated Feb. 21, 1870.)	Mar. 1, 1870
	Gray, James Madison, Louisville, Ky. Hand corn husker and sheller.....	Dec. 27, 1870
	Gray, James M., and William C. Coombs. ( <i>See Coombs &amp; Gray.</i> )	
104,448	Gray, Jerome M., Hamilton, N. Y. Weather-strip for doors.....	June 21, 1870
100,393	Gray, John D., Philadelphia, Pa. Oil-can.....	Mar. 1, 1870
98,952	Gray, Matthew D., Terre Haute, Ind. Water-elevator.....	Jan. 18, 1870
107,678	Gray, Solomon S., Philadelphia, Pa. Machine for jointing staves.....	Sept. 27, 1870
106,355	Gray, William H., Ashfield, Mass. Hay-loader.....	Aug. 16, 1870
4,386	Gray, William T., et al. ( <i>See Wright and Rowe, assignors.</i> )	
109,611	Greasly, Edmund, Philadelphia, Pa. Knitted fabric..... (Design).....	Oct. 4, 1870
	Greeley, John P., assignor to self and Benjamin Greeley, Boston, Mass. Apparatus for aging whisky and other spirits. (Antedated November 17, 1870.)	Nov. 29, 1870
3,947	Greeley, John P., Boston, and Levi W. Buxton, Lynn, Mass., assignors of part interest to Thomas H. Dodge. Mowing-machine..... (Reissue).....	May 3, 1870
108,132	Greeley, John P., assignor to self, Joseph B. Leonard, and Benjamin Greely, Boston, Mass. Sole-sewing machine.....	Oct. 11, 1870
106,356	Greely, Benjamin J., Boston, Mass. Buckle with button-hole attachment.....	Aug. 16, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,886	Greely, B. J., assignor to Thomas O. Potter and Joseph W. Smith, Boston, Mass. Suspender.....	Mar. 15, 1870
	Greely, Samuel A., <i>et al.</i> (See Smith, Greely & Campaigne.)	
98,534	Greely, W. Q., St. Anthony, Minn. Cant-hook.....	Jan. 4, 1870
100,236	Green, Charles, Wilmington, Del. Construction of barrels and packages.....	Mar. 1, 1870
109,890	Green, Charles, assignor to Charles Parker, Rochester, N. Y. Breech-loading fire-arm.....	Dec. 6, 1870
	Green, David N., and John C. Bennett. (See Bennett & Green.)	
100,750	Green, Ebenezer G., East Gloucester, Mass. Steering-apparatus.....	Mar. 15, 1870
104,449	Green, George B., Philadelphia, Pa. Bolt for doors and shutters.....	June 21, 1870
98,864	Green, G. F., Kalamazoo, Mich. Universal geared-joint.....	Jan. 18, 1870
	Green, Henry, and Alexander F. Murray. (See Murray & Green.)	
109,509	Green, Henry H., Fort Wayne, Ind. Horse hay-rake.....	Nov. 22, 1870
98,489	Green, Hiram, Norwalk, Conn. Burglar-alarm.....	Jan. 4, 1870
101,259	Green, Jeremiah D., Troy, N. Y. Wheel for railway-cars.....	Mar. 29, 1870
105,194	Green, John, Boston, Mass. Boiler-tube cleaner.....	July 12, 1870
101,007	Green, Melvin R., assignor to self, Benjamin P. Clemence, and Grinnell Burt, Warwick, N. Y. Sash-balance.....	Mar. 22, 1870
108,017	Green, Melvin R., Warwick, N. Y. Bolt for barn-doors, &c.....	Oct. 4, 1870
98,689	Green, Oliver C., Dublin, Ind. Dropping-device for harvesters.....	Jan. 11, 1870
99,562	Green, Robert, Boonton, N. J. Railway-car coupling.....	Feb. 8, 1870
103,779	Green, Thomas G., England. Machine for molding earthenware.....	Nov. 1, 1870
99,563	Green, William, Ashland, Ohio. Mode of connecting pitmen to cutter-bars.....	Feb. 8, 1870
107,250	Green, William H., assignor to self and Frederick McH. Kitching, New York, N. Y. Marking pots.....	Sept. 13, 1870
	Green, William H., and Samuel S. Vollum. (See Vollum & Green.)	
99,878	Greene, B. D., Sturgis, Mich. Vapor-burner.....	Feb. 15, 1870
106,689	Same..... same.....	Aug. 23, 1870
	Greene, Benjamin F., <i>et al.</i> (See Clarnet, John E., assignor.)	
	Greene, Calvin P., and Roderick F. Stocking. (See Stocking & Greene.) (Two cases.)	
4,161	Greene, Chauncey O., Troy, N. Y. Water-reservoir for cooking-stoves. (Re-issue.).....	Oct. 25, 1870
103,872	Greene, Darwin A., New York, N. Y. Check-valve.....	June 7, 1870
104,139	Same..... Lubricator.....	June 14, 1870
	Greene, F., <i>et al.</i> (See Strong, R. H., assignor.)	
	Greene, John N., <i>et al.</i> (See Russell, Erastus T., assignor.)	
101,121	Greene, Samuel C., Vicksburgh, Miss. Holder for metallic cartridge-cases.....	Mar. 22, 1870
4,013	Greene, Sylvester S., Henrietta, N. Y. Fire-tongs..... (Design.)	May 10, 1870
99,879	Greenfield, Ernest, New York, N. Y. Manufacture of lozenges and confectionery.....	Feb. 15, 1870
99,880	Same..... Crackers or meat-biscuit.....	Feb. 15, 1870
99,667	Greenleaf, Clemments A., Indianapolis, Ind. Turn-table.....	Feb. 8, 1870
	Same..... (See Farr, Henry L., assignor.)	
105,065	Greenman, Arthur, Dorset, Ill. Whiffletree.....	July 5, 1870
	Greenwalt, W. H. (See Pennock, W. H., assignor.)	
104,579	Greenwell, William, Ripley, Ill. Water-wheel.....	June 21, 1870
	Greenwood, Calvin S. (See Watkins, Gardner A., assignor.)	
	Greenwood, M., & Co. (See Roux, Benoit, assignor.)	
	Same..... same..... (Design.)	
105,066	Greenwood, Nathan S., East Kendall, N. Y. Grain and seed sieve.....	July 5, 1870
	Greenwood, Peter, and Henry Bottomley. (See Bottomley & Greenwood.)	
107,773	Greenwood, Prentice W., Peterborough, N. H. Sash-holder.....	Sept. 27, 1870
	Greenwood Scythe Company. (See Stimson, Lovitt, assignor.)	
103,449	Greer, James, and Rufus J. King, Dayton, Ohio. Cooking-stove.....	May 24, 1870
101,962	Greeson, E. M., Americus, Ga. Cotton-thinning machine.....	April 12, 1870
106,576	Gregg, Allen, assignor to self and Perry Gregg, Springborough, Ohio. Washing-machine.....	Aug. 23, 1870
	Gregg, A. H. (See Clinton, Charles M., assignor.)	
103,018	Gregg, Benjamin, Bennington, Vt. Bed-bottom.....	Oct. 4, 1870
	Gregg, Erastus C., and Chauncey P. (See Clapp, Charles, assignor.)	
	Gregg, F. H. W. (See Farrington, Joel, assignor.)	
109,891	Gregg, Mahlon, Rochester, N. Y. Water-wheel.....	Dec. 6, 1870
103,328	Gregory, Charles A., Poughkeepsie, N. Y. Bottle-filling apparatus.....	July 12, 1870
102,677	Gregory, George W., New York, N. Y. Combination-tool.....	May 3, 1870
104,140	Same..... Shovel.....	June 14, 1870
103,736	Gregory, Seth, Galesburgh, Mich. Portable furnace.....	May 31, 1870
105,195	Gregory, Thomas Briggs, Champaign, Ill. Bridge.....	July 12, 1870
107,774	Same..... Bedstead-clamp.....	Sept. 27, 1870
100,524	Gremis, Henry, Westmoreland, N. Y. Bee-hive.....	Mar. 8, 1870
101,858	Gresham, James, England. Giffard injector.....	April 12, 1870
101,997	Greve, Herman, Sparta, Wis. Gun-wiper.....	April 19, 1870
	Same. (See Smith, William, assignor.)	
103,323	Grey, John D., assignor to self and John Lippincott, Pittsburgh, Pa. Manufacture of sheet-iron. (Antedated May 7, 1870.).....	May 24, 1870
3,848	Gridley, F. C., Hudson, Wis. Weather-strip..... (Reissue.)	Feb. 22, 1870
106,932	Gridley, Henry H., Auburn, N. Y. Head-block.....	Aug. 30, 1870
103,123	Griffin, Crawford S., and Josiah W. Wilkins, Stockton, Me. Dovetailing-machine.....	Nov. 8, 1870
98,762	Griffin, E. J., Hart's Falls, N. Y. Adjustable lettering-block.....	Jan. 11, 1870
99,310	Griffin, E. W., assignor to self and F. S. Brown, Pepperell, Mass. Thrashing-machine.....	Feb. 1, 1870
	Griffin, L. H., <i>et al.</i> (See Humes, James H., assignor.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,474	Griffin, Thaddens F., and William R. Call. ( <i>See Call &amp; Griffin.</i> )	
109,892	Griffin, Thaddus F., and Robert Farr, jr., Gloucester, Mass. Copper paint for ships' bottoms	Oct. 18, 1870
	Griffin, William H., Springfield, Mass. Window-frame	Dec. 6, 1870
	Griffing, Charles S. S., and Thomas Sharp. ( <i>See Sharp &amp; Griffing.</i> )	
108,350	Griffith, Frederick W., et al. ( <i>See Stephenson, Thompson &amp; Blake, assignors.</i> )	
	Griffith, Howard V., assignor to self, D. W. A. Belford, and J. M. Hilsman, Altoona, Pa. Corpse-preserver	Oct. 18, 1870
98,490	Griffith, John, G. W. Wundram, and T. H. Muller, New York, N. Y. Sectional steam-generator	Jan. 4, 1870
108,703	Griffith, John, and George W. Wundram, New York, N. Y. Sectional steam-generator	Oct. 25, 1870
100,287	Griffith, John, et al. ( <i>See Muller, T. H., assignor.</i> ) (Reissue.)	
	Griffith, Patrick, Brooklyn, N. Y. Parlor hot-house	Mar. 1, 1870
	Griffith, Samuel R. and Albert R., et al. ( <i>See Rider, Samuel, assignor.</i> )	
106,357	Griffith, Thomas. ( <i>See Wedge, Francis, assignor.</i> )	
	Griffith, Thomas K., Redstone, Pa. Apparatus for raking and binding grain. (Antedated Aug. 4, 1870)	Aug. 16, 1870
98,690	Grigg, Horace H., Philadelphia, Pa. Medical compound	Jan. 11, 1870
104,580	Griggs, George H., Worcester, Mass. Car-truck	June 21, 1870
103,196	Grigsby, Mary E., Putnamville, Ind. Fruit-straining apparatus	July 12, 1870
108,133	Grill, Louis A., New York, N. Y. Neck-tie	Oct. 11, 1870
105,798	Grillet, Alexander, Philadelphia, Pa. Bedstead-fastening	July 26, 1870
101,470	Grim, Abraham Keefer, and Austin D. Moore, San Francisco, Cal. Reflector for streets	April 5, 1870
	Grim, David, and Alonzo Hanmer. ( <i>See Hanmer &amp; Grim, assignors.</i> )	
101,122	Grimes, Charles T., Lancaster, Ky. Horse hay-fork	Mar. 22, 1870
	Grimes, Franklin P., and Bartholomew Wilson. ( <i>See Wilson &amp; Grimes.</i> )	
104,300	Grimes, Franklin T., Liberty, Mo. Inkstand	June 14, 1870
109,612	Same. Attachment for sewing-machines	Nov. 29, 1870
99,430	Grimm, Richard, New York, N. Y. Spring-motor	Feb. 1, 1870
110,354	Grimshaw, William D., Newark, N. J. Machine for cutting sheet-metal to an oval form	Dec. 20, 1870
100,751	Grindrod, John, Albany, N. Y. Coping for walls	Mar. 15, 1870
103,737	Grinter, Thomas W., Russellville, Ky. Fountain-pen	May 31, 1870
4,204	Griscom, Chalkley, Lewis, and John P., Mahanoy Plane, Pa. Pump (Reissue)	Dec. 20, 1870
4,475	Griscom, William M., assignor to Harbster Brothers & Co., Reading, Pa. Sad-iron	Nov. 15, 1870
106,812	Griswold, John A., assignor to self and Phineas E. Merrihew, Chicago, Ill. Fire-escape	Aug. 30, 1870
	Griswold, M., and Samuel Selden. ( <i>See Selden &amp; Griswold.</i> )	
106,152	Griswold, Merritt W., New York, N. Y. Car-brake	Aug. 9, 1870
105,565	Griswold, Pardon H., Grand Rapids, Mich. Barrel	July 19, 1870
107,900	Groat, John W., New York, N. Y. Water-meter	Oct. 4, 1870
100,288	Groesbeck, John, Philadelphia, Pa. Adding-machine	Mar. 1, 1870
102,935	Groesbeck, William H., Saratoga Springs, N. Y. Hold-back for vehicles	May 10, 1870
106,053	Grogan, Henry, Flatbush, N. Y. Lubricating compound	Aug. 2, 1870
100,026	Grogan, John W., assignor to self and James Duffy, Brooklyn, N. Y. Door-knob	Feb. 22, 1870
98,585	Grosc, John T., assignor to self and William E. Kinnear, Upper Sandusky, Ohio. Washing-apparatus	Jan. 4, 1870
4,141	Same. same. (Reissue)	Oct. 4, 1870
101,362	Gross, Henry, Tiffin, Ohio. Permutation-lock	Mar. 29, 1870
103,450	Same. same.	May 24, 1870
108,134	Gross, Henry, Cincinnati, Ohio. Permutation-lock	Oct. 11, 1870
107,174	Gross, Henry, and Joseph L. Hall, Cincinnati, Ohio. Permutation-lock	Sept. 6, 1870
102,253	Grosse, Guy E., Massillon, Ohio. Caster	April 26, 1870
104,581	Grossius, John, Cincinnati, Ohio. Heating-stove	June 21, 1870
108,351	Grosskopp, Henry H. H., Philadelphia, Pa. Hand-stamp	Oct. 18, 1870
	Grossmann, John, and Paul Boufils. ( <i>See Boufils &amp; Grossmann.</i> )	
	Grosvenor, Jonathan P., Lowell, Mass. Method of clamping cutters in cutter-heads for planing-machines. (Extension)	Nov. 25, 1870
99,668	Grout, Selim Elijah, West Concord, Vt. Towel-drier	Feb. 8, 1870
105,670	Groux, Louis, New York, N. Y. Manufacture of soap	July 26, 1870
4,477	Grove, William Henry, Philadelphia, Pa. Show-case	Nov. 15, 1870
103,873	Grover, Manasseh, Clyde, Ohio. Pruning-knife	June 7, 1870
	Grover, Oliver F., Middletown, Conn. Printers' composing-stick. (Extension)	July 6, 1870
	Same. ( <i>See Young, Robert Clark, assignor.</i> )	
	Grover, T. E., et al. ( <i>See Howard, James Spooner, assignor.</i> )	
	Same. ( <i>See Perkins, Howard, assignor.</i> )	
	Same. ( <i>See Howard, James S., assignor.</i> )	
100,139	Grover, William O., Boston, Mass. Sewing-machine	Feb. 22, 1870
	Groves, Harrison, et al. ( <i>See Thomas, John, assignor.</i> )	
108,256	Grow, Henry, assignor to self and William Grow Smith, Philadelphia, Pa. Shutter-fastener	Oct. 11, 1870
99,564	Grube, Amos, West Hempfield Township, Pa. Ventilating millstone	Feb. 8, 1870
106,690	Grube, Tobias K., Napoleon, Ohio. Construction of ditches	Aug. 23, 1870
100,027	Gruber, John P., New York, N. Y. Apparatus for cooling and purifying beer, water, and other liquids	Feb. 22, 1870
104,301	Same. Pneumatic liquid-elevator	June 14, 1870
	Gruenhagen, John H., and Charles Gernes. ( <i>See Gernes &amp; Gruenhagen.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,018	Gruger, John P., assignor to self and Frederick Rotrigo, Philadelphia, Pa. Envelope-opener.....	June 7, 1870
100,752	Grundmann, Theodore, Cleveland, Ohio. Apparatus for coloring beer and other liquids. (Antedated March 5, 1870).....	Mar. 15, 1870
110,229	Grundmann, Theodore, Cincinnati, Ohio. Apparatus for the manufacture of vinegar.....	Dec. 20, 1870
102,254	Grüneberg, John D., Camden, N. J. Coating metal.....	April 26, 1870
103,042	Gschwind, Charles William, Port Republic, N. J. Door-guard.....	May 17, 1870
108,780	Gudge, Benjamin B., Chicago, Ill. Milk-wagon.....	Nov. 1, 1870
104,582	Gue, Albert F., East Manville, Mich. Machine for cutting levels on the tenons of spokes.....	June 21, 1870
109,817	Same..... Wagon-tongue support.....	Dec. 6, 1870
3,884	Guenther, George, assignor to self and E. H. Neymann, Chicago, Ill. Manufacture of glue.....	Mar. 22, 1870
108,257	Guernsey, William B., Jersey City, N. J. Electro-magnetic burglar-alarm.....	Oct. 11, 1870
106,813	Guess, Charles M., New Orleans, La. Treadle-motion.....	Aug. 30, 1870
108,352	Guest, Augusta, Brooklyn, N. Y. Fire-alarm thermometer.....	Oct. 18, 1870
109,893	Guice, Thomas, Mt. Andrew, Ala. Cotton-plow.....	Dec. 6, 1870
106,054	Guichard, Pierre Jacques Gerbault, France. Lime-kiln.....	Aug. 2, 1870
101,860	Guidet, John William, St. Joseph, Mo. Carriage-wheel.....	April 12, 1870
4,106	Guidet, Charles, New York, N. Y. Street-pavement..... (Reissue).....	Aug. 23, 1870
108,353	Guild, Augustus, and William H. Pierce, Middletown, Conn. Self-releasing davit-ring.....	Oct. 18, 1870
	Guild, Chester, jr. (See Williams, Theron R., assignor.)	
3,797	Guild, William H., Brooklyn, N. Y. Purging and graining sugar... (Reissue).....	Jan. 18, 1870
3,828	Guild, William H., Williamsburgh, N. Y. Pneumatic pump..... (Reissue).....	Feb. 8, 1870
	Guild, William H., and William F. Garrison. (See Hubbard & Conant, assignors.)	
	Guilderslieve, Henry C., and James B. Cleveland. (See Cleveland & Guilderslieve.)	
103,451	Guilford, Ralph, assignor to Cheshire Manufacturing Company, West Cheshire, Conn. Button.....	May 24, 1870
	Guimaraes, J. G. O. (See De La Peña, Manoel, assignor.)	
103,603	Gulden, Jacob, Keyport, N. J. Soldering-apparatus.....	May 31, 1870
	Gulden, Jacob, and Charles G. Dudley. (See Dudley & Gulden.)	
99,311	Gummer, Albert, Omro, Wis. Stump-extractor. (Antedated Jan. 29, 1870).....	Feb. 1, 1870
106,358	Gumpel, Charles Godfrey, England. Steering-apparatus.....	Aug. 16, 1870
102,536	Gundaker, Henry, Lancaster, Pa. Embroidery-holder.....	May 3, 1870
	Gunn, Daniel A., and Elisha Whitcomb. (See Whitcomb & Gunn.)	
	Gunn, Levi J., and Charles H. Amidon. (See Moore, A. C., assignor.) (Reissue.)	
105,671	Gunn, Timothy, Hamilton County, Ind. Boot-jack and spur.....	July 26, 1870
101,998	Gunshennan, Michael, New York, N. Y. Farm-gate.....	April 19, 1870
99,773	Gunther, Carl, assignor to Frederick Volkman, Prussia. Process and material for ornamenting textile fabrics.....	Feb. 15, 1870
109,407	Gurney, Francis, Newburyport, Mass. Shoe.....	Nov. 22, 1870
	Gury, Louis C. (See Fay, Edward, assignor.)	
104,302	Guseman, William D., James A. Davis, and H. D. McGeorge, Morgantown, W. Va. Seed-sower.....	June 14, 1870
102,199	Gustin, Benjamin F., Middletown, Ind. Pump.....	April 19, 1870
105,067	Gustin, Isaac H., Middletown, Ind. Gate.....	July 5, 1870
98,953	Gutekunst, Louis, Philadelphia, Pa. Breakwater.....	Jan. 18, 1870
99,881	Guthrie, Alfred, assignor to self and A. E. Goodrich, Chicago, Ill. Apparatus for refrigerating.....	Feb. 15, 1870
106,480	Guthrie, James T., and Louis Pausch, Leesburgh, Ohio. Railway-switch.....	Aug. 16, 1870
103,874	Gutierrez, Joseph Justinus, Jefferson Parish, La. Street-railway car.....	June 7, 1870
	Gutta Percha and Rubber Manufacturing Company <i>et al.</i> (See Perry & Mannheim, assignors.)..... (Reissue.)	
99,431	Guttridge, D. C., assignor to self and R. A. Dunn, Pittsburgh, Pa. Leather-sam-mier.....	Feb. 1, 1870
103,604	Gutzkow, Frederic, San Francisco, Cal. Method of distilling in vacuo.....	May 31, 1870
100,028	Gay, C. B., Postville, Iowa. Fire setting and cooling apparatus.....	Feb. 22, 1870
	Guyon, Jacob N., and Henry L. Sprague. (See Sprague & Guyon.)	
101,859	Guyot, A. Etienne, Switzerland. Winding watches.....	April 12, 1870
101,610	Gwathmey, Richard R., assignor to self and Charles W. Matthews, Philadelphia, Pa. Cotton-gin.....	April 5, 1870
100,394	Gwyn, Edward, Tiffin, Ohio. Clamped mold for making lead-joints in pipe-connections.....	Mar. 1, 1870
101,861	Gwynn, Stuart, assignor to American Metaline Company, New York, N. Y. Composition of matter called metaline, for journals, bearings, &c. (Antedated March 30, 1870).....	April 12, 1870
101,862	Same..... same.....	April 12, 1870
101,863	Same..... same.....	April 12, 1870
101,864	Same..... same.....	April 12, 1870
101,865	Same..... same.....	April 12, 1870
101,866	Same..... same.....	April 12, 1870
101,867	Same..... same.....	April 12, 1870
101,868	Same..... same.....	April 12, 1870
101,869	Same..... Process of forming compositions of matter called metaline, for journal-bearings, steps, and other articles liable to friction. (Antedated March 30, 1870).....	April 12, 1870
102,810	Haack, Henry F., New York, N. Y. Padlock.....	May 10, 1870
104,583	Haas, Christian, Chicago, Ill. Buggy-seat.....	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,678	Haasz, Daniel F., assignor to self and Emilius Nicholas Scherr, jr., Philadelphia, Pa. Spring-seat .....	May 3, 1870
107,679	Haberland, Gottfried, Bloomington, Ill. Ear-ring .....	Sept. 27, 1870
98,763	Habermehl, John, Allegheny, Pa. Washing-machine .....	Jan. 11, 1870
102,255	Same.....same .....	April 26, 1870
98,954	Hackett, George H., assignor to self and Wallace W. Swan, North Tunbridge, Vt. Drag-rake .....	Jan. 18, 1870
105,672	Hackett, Joseph, Louisville, Ky. Coal-stove.....	July 26, 1870
107,483	Same.....Fire-place grate.....	Sept. 20, 1870
102,537	Hackley, William, assignor to self and Charles T. Almy, Moosup, Conn. Self-acting mule for spinning .....	May 3, 1870
103,173	Hackney, John M., Danville, Ky. Filter .....	May 17, 1870
4,080	Hadfield, John G., Philadelphia, Pa. Medical vacuum-apparatus..... (Reissue) ..	July 26, 1870
	Hadley, Amos, <i>et al.</i> (See Perham, Aurestus S., assignor.) .....	
100,395	Hadley, Charles F., assignor to Ames Manufacturing Company, Chicopee, Mass. Device for reversing motion.....	Mar. 1, 1870
	Hadley, George W., and T. C. Page. (See Page & Hadley.) .....	
106,153	Hadley, Nicholas B., Providence, R. I. Scroll-saw .....	Aug. 9, 1870
	Hadley, T. G., <i>et al.</i> (See Geer, George, assignor) .....	
105,068	Haedrich, Henry G. and Edward M., Philadelphia, Pa. Combined boot and shoe for horses .....	July 5, 1870
105,566	Same.....Combined horseshoe and boot .....	July 19, 1870
102,256	Haefely, Edward, Lowell, Mass. Yarn-washing machine .....	April 26, 1870
110,355	Hafenegger, Joseph, San Francisco, Cal. Explosive compound .....	Dec. 20, 1870
109,202	Hafkemeyer, Frederick W., and Robert Terry. (See Terry & Hafkemeyer.) ..	
101,611	Hagan, Edward, New York, N. Y. Chair and lounge .....	Nov. 15, 1870
104,019	Hagan, John C., Nashville, Tenn. Railway-rail.....	April 5, 1870
108,904	Same.....Water-supplying apparatus.....	June 7, 1870
108,905	Same.....Pressure-regulator for water and steam apparatus.....	Nov. 1, 1870
4,167	Same.....Steam and water supply and pressure-regulator.....	Nov. 1, 1870
	Hagan, John C., assignor of one-half interest to James, Isaiah D., and Ivan N. Walker, Nashville, Tenn. Water-supplying apparatus..... (Reissue) ..	Oct. 25, 1870
	Hagar & Co. (See Cash, Thomas M., assignor) .....	
	Hagerstown Agricultural Implement Manufacturing Company. (See Cook, John H., assignor.) .....	
99,882	Hagerty, John T., Camp Point, Ill. Railway-car axle-box.....	Feb. 15, 1870
103,324	Hagstroom, Charles John, Chicago, Ill. Steam-boiler furnace.....	May 24, 1870
101,123	Hahn, David, Reserve, Ind. Chimney-cowl.....	Mar. 22, 1870
109,314	Hahn, John William, San Francisco, Cal. Apparatus for the manufacture of sugar .....	Nov. 15, 1870
105,197	Hahn, Theodor, New York, N. Y. Combined latch and lock. (Antedated June 30, 1870) .....	July 12, 1870
	Same.....(See Hoppe, F., assignor.) .....	
104,020	Haile, Robert, assignor to Charles Diebold and Jacob Kiengle, Cincinnati, Ohio. Spindle for safe-locks.....	June 7, 1870
105,799	Hailer, Lewis, assignor to William C. Dodge, Washington, D. C. Gun-lock.....	July 26, 1870
104,021	Hailes, William, Albany, N. Y. Cooking-stove .....	June 7, 1870
4,433	Same.....same .....	Oct. 25, 1870
4,434	Same.....Parlor-stove.....	Oct. 25, 1870
110,230	Same.....Cooking-stove.....	Dec. 20, 1870
	Haines, Elijah M. (See Shatswell, George, assignor.) .....	
106,055	Haines, Henry, Cedarville, Ill. Combined seeder and cultivator.....	Aug. 2, 1870
107,611	Haines, James W., Genoa, Nev. Chute for delivering timber.....	Sept. 20, 1870
100,396	Haines, Joel, West Middlebury, Ohio. Fruit-jar.....	Mar. 1, 1870
101,996	Haines, Joseph C., West Philadelphia, Pa. Clothes-drier.....	April 19, 1870
106,691	Haines, Lewis A., Wakefield, Md. Time-lock .....	Aug. 23, 1870
99,883	Haines, W. H., assignor of one-half interest to Thomas Albert Sandford, Newark, N. J. Egg-beater, &c. ....	Feb. 15, 1870
	Haines, William H., <i>et al.</i> (See Newsham, Haines & Henson.) .....	
107,251	Hainque, Martial, assignor to self and Alexander Steiger, San Francisco, Cal. Permutation-lock.....	Sept. 13, 1870
109,894	Hainsworth, William, Allegheny City, Pa. Mold and core for metallic castings. ....	Dec. 6, 1870
109,818	Hair, Theodore, <i>et al.</i> (See Durham, Wood & Hair.) .....	
	Hair, Theodore, and James Wood, Norristown, Pa. Shutter-fastener .....	Dec. 6, 1870
	Haldeman, John. (See Kneass, Strickland, assignor.) .....	
98,491	Hale, Bernice S. and James B., Lowell, Mass. Machine for making rope .....	Jan. 4, 1870
102,538	Hale, D. Frank, Chicopee, Mass. Reversible butt-hinge .....	May 3, 1870
108,587	Same.....Game .....	Oct. 25, 1870
	Hale, D. Frank, <i>et al.</i> (See Crossman, Charles P., assignor) .....	
108,588	Hale, Heman B., Rockford, Ill. Fastening artificial teeth to metallic plates. ....	Oct. 25, 1870
	(Antedated Oct. 21, 1870) .....	
108,019	Hale, Luke, Hollis, N. H. Washing-machine .....	Oct. 4, 1870
109,124	Hale, Nathan M., Cleborne, Texas. Cotton-scraper and chopper.....	Nov. 8, 1870
	Hale, Perly, jr. (See Morrell, Albert W., assignor.) .....	
99,432	Hale, W. E., Chicago, Ill. Sheathing-boards for buildings. (Antedated Aug. 1, 1863) .....	Feb. 1, 1870
98,955	Hale, William P., assignor to self and H. Miller, Ionia, Mich. Machine for finishing spokes .....	Jan. 18, 1870
107,362	Haley, Chauncey O., Westfield, Mass. Spittoon-holder.....	Sept. 13, 1870
	Haley, John J., and James B. Forsyth. (See Forsyth & Haley.) .....	
	Haley, William H., <i>et al.</i> (See Cranston, Banks & Ingersoll, assignors.) ..	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,510	Hall, Alexander W., assignor to self and Edwin R. Warren, New York, N. Y. Apparatus for the manufacture of illuminating-gas.....	Nov. 22, 1870
98,764	Hall, Alfred, Perth Amboy, N. J. Clay-crusher.....	Jan. 11, 1870
101,457	Hall, Annie J., San Francisco, Cal. Pencil-holder.....	April 5, 1870
4,348	Hall, Charles D., assignor to the Bristol Brass and Clock Company, Bristol, Conn. Handle of spoons, forks, &c..... (Design).....	Sept. 13, 1870
100,617	Hall, C. F., Brooklyn, N. Y. Machine for refitting conical valves.....	Mar. 8, 1870
	Hall, Daniel, and William Harris. (See Harris & Hall.)	
100,753	Hall, Edgar R., and William H. Town; said Hall assignor to said Town, Syracuse, N. Y. Device for operating churns.....	Mar. 15, 1870
102,114	Hall, Edward, Beloit, Wis., and Francis D. Sill, Rockton, Ill. Stove-pipe shelf, heater, and damper.....	April 19, 1870
103,043	Hall, Elias P., assignor to self and Ozro W. Clapp, Chicago, Ill. Padlock.....	May 17, 1870
104,152	Hall, Francis L., Oneida, N. Y. Adjustable shed.....	June 14, 1870
104,951	Hall, Gardiner, jr., South Willington, Conn. Machine for printing labels on spools.....	July 5, 1870
102,257	Hall, Gardiner, jr., and George W. Averell, South Willington, Conn. Machine for printing on spools.....	April 26, 1870
98,765	Hall, George H., and Lorenzo D. Farra, Germantown, Pa. Sash and door clamp. (Antedated Jan. 7, 1870).....	Jan. 11, 1870
109,613	Hall, Henry L., Woodbridge, Iowa. Combined seed-sower and cultivator.....	Nov. 29, 1870
106,481	Hall, Henry M., New York, N. Y. Ruffling attachment for sewing-machines.....	Aug. 16, 1870
104,141	Hall, Herman L., Buffalo, N. Y. Portable self-elevator.....	June 14, 1870
108,258	Hall, James, Cincinnati, Ohio. Bake-oven.....	Oct. 11, 1870
104,450	Hall, James C., Battle Creek, Mich. Rain-water conductor and filter.....	June 21, 1870
109,005	Hall, James T., assignor to self and Isaac Pierce, Alma, Mich. Lath-machine.....	Nov. 8, 1870
102,812	Hall, John, jr., Temperanceville, Pa. Potato-digger.....	May 10, 1870
102,813	Same..... Agitator-wheel for potato-diggers.....	May 10, 1870
102,814	Same..... Potato-digger.....	May 10, 1870
102,811	Hall, John, jr., and Owen Flanigan, Temperanceville, Pa. Potato-digger. (Antedated Dec. 20, 1869).....	May 10, 1870
98,956	Hall, J. A., Raleigh, Ind. Combined seeder and cultivator.....	Jan. 18, 1870
101,727	Hall, John A., Canada. Washing-machine.....	April 12, 1870
105,069	Hall, John C., and Allan C. Richards, Philadelphia, Pa. Folding-bedstead.....	July 5, 1870
99,183	Hall, John D., assignor to James A. Largay, Philadelphia, Pa. Machine for grinding pearl-button blanks.....	Jan. 25, 1870
107,901	Hall, John S., Pittsburgh, Pa. Machine for making clevises.....	Oct. 4, 1870
	Hall, John S. and Abel W., et al. (See Eiberweiser, John, assignor)..... (Reissue)	
105,673	Hall, Joseph D., assignor to William Kingsworth, Canton, Ohio. Plow.....	July 26, 1870
105,800	Hall, Joseph L., Cincinnati, Ohio. Lock-spindle.....	July 26, 1870
4,018	Hall, Joseph L., assignor to Hall's Safe and Lock Company, Cincinnati, Ohio. Lock..... (Reissue).....	June 7, 1870
	Hall, Joseph L., and Henry Gross. (See Gross & Hall.)	
	Hall, Joshua E., and L. Austin. (See Austin & Hall.)	
	Hall, Joshua E., et al. (See Rigg, Hall & Fenton.)	
107,039	Hall, Lewis, Metamora, Ill. Harvester.....	Sept. 6, 1870
105,329	Hall, Luther, assignor to Alfred B. Ely, Boston, Mass. Machine for sewing books.....	July 12, 1870
99,884	Hall, Morgan P., Gayville, Ill. Pump.....	Feb. 15, 1870
106,577	Hall, Moses P., Hinsdale, N. Y. Traction-engine.....	Aug. 23, 1870
105,070	Hall, Samuel Z., assignor to self, Starks W. Lewis, and Elias B. Brown, Ossining, N. Y. Cotton-gin.....	July 5, 1870
101,363	Hall, Thomas, Brooklyn, N. Y. Cover for sewing-machines.....	Mar. 29, 1870
104,845	Hall, Thomas F., Omaha, Neb. Traction-engine.....	June 28, 1870
104,143	Hall, Thomas Q., Indianapolis, Ind. Bedstead.....	June 14, 1870
103,174	Hall, Thomas S., Stamford, Conn. Electro-circuit instrument for railway-signals.....	May 17, 1870
3,859	Hall, Thomas S., assignor to Hall's Patent Electric Railway Switch and Draw-bridge Signal Company, New Haven, Conn. Electro-magnetic alarm for railroad-switches..... (Reissue).....	Mar. 1, 1870
103,875	Same..... Electro-magnetic signal-apparatus for railroads.....	June 7, 1870
105,447	Hall, Thomas S., assignor to Hall's Patent Electric Railway Switch and Draw-bridge Signal Company, Stamford, Conn. Electro-magnetic alarm.....	July 19, 1870
110,566	Hall, William, Quincy, Ill. Cooking-range.....	Dec. 27, 1870
100,618	Hall, William H., assignor to self and Joseph W. Haskins, Boston, Mass. Elastic protector for horses' feet.....	Mar. 8, 1870
107,040	Hall, William M., jr., Bloomington, Ill. Grain-dump.....	Sept. 6, 1870
105,801	Hall, William N., Springfield, Tex. Carriage-axle.....	July 26, 1870
107,775	Same..... Permutation-lock.....	Sept. 27, 1870
101,870	Hall, William Samuel, assignor to Henry W. Adams, New York, N. Y. Kiln for burning bricks, &c.....	April 12, 1870
	Hall, William Smith. (See Crane & Polsey, assignors.)	
104,448	Halladay, Daniel, Batavia, Ill. Grinding-mill.....	July 19, 1870
4,064	Halladay, Daniel, assignor to the United States Wind Engine and Pump Company, Batavia, Ill. Windmill..... (Reissue).....	July 5, 1870
99,669	Hallam, A. C., and James W. McKee, New York, N. Y. Spring-power.....	Feb. 8, 1870
101,612	Haliberg, Frederick Pontus, Sweden. Steam-heater.....	April 5, 1870
	Halle, William, and Frank Z. Overmeyer. (See Overmeyer & Halle.)	
98,586	Haller, William L., Philadelphia, Pa. Fruit-jar.....	Jan. 4, 1870
99,885	Halliday, John, Lynn, Mass. Coloring matter to be used in vulcanizing rubber.....	Feb. 15, 1870
100,140	Hallidie, A. S., San Francisco, Cal. Grip-pulley.....	Feb. 22, 1870
101,613	Hallock, Valentine H., assignor to self, Curtis Stanton, and James R. Dixon, Queens, N. Y. Ice-cutting machine.....	April 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,870	Hallowell, Albert, assignor, through mesne assignments, to Gustavus D. and Calvin Dows and George S. Cushing, Lowell, Mass. Tumbler-washer. (Reissue)	Mar. 8, 1870
100,754	Hallowell, Albert, assignor to self, Abel T. Atherton, and Horace T. Durgin, Lowell, Mass. Method of strengthening bobbins or spools.	Mar. 15, 1870
110,231	Hallowell, Albert, assignor to Gustavus D. and Calvin Dows and George S. Cushing, Lowell, Mass. Tumbler-washer.	Dec. 20, 1870
3,973	Hall's Safe and Lock Company. (See Kistler, Willoughby F., assignor.)	
	Halsey, William H., assignor to Halsey's Patent Box and Case Company, New York, N. Y. Molding watch-cases, lockets, and other articles from hard rubber, &c. (Div. 1, reissue)	May 17, 1870
3,974	Same. . . . New articles of manufacture from hard rubber. (Div. 2, reissue)	May 17, 1870
103,452	Halstead, John E. and Colope C., Blossvale, N. Y. Combined seeder and harrow.	May 24, 1870
4,183	Halsted, Griffith B., Brooklyn, N. Y. Stove-pipe damper. (Reissue)	Nov. 22, 1870
107,252	Ham, George W., Parsonfield, Me. Carriage.	Sept. 13, 1870
103,605	Ham, John C., New York, N. Y. Pony carriage-phaeton.	May 31, 1870
105,674	Ham, John D., assignor to Eli McCroan and W. A. Wilkins, Bethany, Ga. Wagon-hub.	July 26, 1870
3,975	Ham, L. M., Boston, Mass., and John H. Dodge, Chelsea, Mass. Wagon. (Reissue)	May 17, 1870
106,154	Ham, Robert, assignor to Cox, Church & Co., Troy, N. Y. Stove-grate.	Aug. 9, 1870
99,312	Hamblin, Floyd, Madrid Springs, N. Y. Churn.	Feb. 1, 1870
101,260	Hamblin, Sylvanus, Taunton, Mass. Bait-mill for fishermen.	Mar. 29, 1870
104,144	Hamel, Gustavus, De Soto, Mo. Washing-machine.	June 14, 1870
103,175	Hamel, Richard B., and James B. Holden, assignors to selves, Arthur M. Smith, and Henry H. Newkirk, Jersey City, N. J. Mechanical movement.	May 17, 1870
108,704	Hamer, Thomas J., and Martin Walls, Sunbury, Pa. Balance slide-valve.	Oct. 25, 1870
	Hamilton, Henry G. (See Sintzenich, Edwin B., assignor.)	
103,876	Hamilton, Henry J., Brooklyn, N. Y. Compound troches of buchu.	June 7, 1870
105,330	Hamilton, James C. M., Shaver's Creek, Pa. Sash-balance.	July 12, 1870
101,728	Hamilton, James H., Sioux City, Iowa. Photographic-printing apparatus.	April 12, 1870
107,484	Hamilton, James H., Stevenson, Ala. Cultivator.	Sept. 20, 1870
100,029	Hamilton, James Shockey, and L. E. C. Moore. (See Moore & Hamilton.)	
	Hamilton, John, and Robert Patterson, Scotland. Cask for containing fermentable beverages.	Feb. 22, 1870
3,948	Hamilton, John, George W. and Joseph, and L. E. Hanson; said Hanson assignor to Joseph Hamilton, Wheeling, W. Va. Ore-crusher. (Reissue)	May 3, 1870
108,475	Hamilton, Jonas, and George F. Morse, Portland, Me. Changeable-gauge car-wheel.	Oct. 18, 1870
109,315	Hamilton, Jonathan R., Kingston, Minn. Corn-sheller.	Nov. 15, 1870
108,781	Hamilton, Lavinus B., Boston, Mass. Tessellated floor.	Nov. 1, 1870
102,258	Hamilton, Lavinus Bush, assignor to Edwin A. Eaton, Boston, Mass. Gas-heater.	April 26, 1870
103,453	Hamilton, Nathan T., Cedar Falls, Iowa. Soda-fountain.	May 24, 1870
98,957	Hamilton, Robert, Franklin, Ind. Road-scraper.	Jan. 18, 1870
105,567	Same. . . . same.	July 19, 1870
99,866	Hamilton, Silas M., Baltimore, Md. Brick-kiln.	Feb. 15, 1870
99,887	Same. . . . same.	Feb. 15, 1870
101,124	Same. . . . same.	Mar. 22, 1870
100,397	Hamilton, Thomas Foster, Genesee, Ill. Combined spider, skillet, and gridiron.	Mar. 1, 1870
104,730	Hamilton, William, Allegheny City, Pa. Coffin-fastening.	June 28, 1870
104,731	Same. . . . Elevator.	June 28, 1870
107,253	Same. . . . Lid-fastening for burial-caskets.	Sept. 13, 1870
	Hamilton, William, et al. (See Geer, George, assignor.) (Reissue.)	
99,313	Hamilton, W. G., Milton, Wis. Water-elevator.	Feb. 1, 1870
103,738	Hamilton, William M., Jacksonville, Ill. Pump.	May 31, 1870
101,871	Hamilton, William R., Oakland, Pa. Tube-well.	April 12, 1870
107,363	Hamlin, Albert, assignor to Mays & Bliss, Brooklyn, N. Y. Trip-motion for presses, &c. (Antedated Sept. 5, 1870)	Sept. 13, 1870
110,455	Hamlin, Albert D., assignor to Mays & Bliss, Brooklyn, N. Y. Power-press. (Antedated Dec. 22, 1870)	Dec. 27, 1870
4,161	Hamlin, Emmons, assignor to Mason and Hamlin Organ Company, Winchester, Mass. Organ. (Design)	June 21, 1870
106,692	Same. . . . Parlor-organ.	Aug. 23, 1870
99,888	Hamlin, George B., Willimantic, Conn. Thrashing-machine.	Feb. 15, 1870
101,872	Same. . . . Driving-gearing.	April 12, 1870
104,846	Same. . . . Corn-harvester.	June 28, 1870
106,359	Same. . . . Machine for preparing apples for the manufacture of cider.	Aug. 16, 1870
106,360	Same. . . . Gearing and self-adjusting shaft.	Aug. 16, 1870
106,482	Same. . . . Stalk and kindling-wood cutter.	Aug. 16, 1880
106,483	Same. . . . Horse-power.	Aug. 16, 1870
108,259	Same. . . . Belt-gearing.	Oct. 11, 1870
105,568	Hamlin, Mahlon, assignor to self and Benjamin G. Welch, Catawissa, Pa. Bolt-threading machine.	July 19, 1870
105,569	Same. . . . same.	July 19, 1870
100,398	Hammer, T. F., Branford, Conn. Cast-metal lamp.	Mar. 1, 1870
104,451	Hammill, William, Parma, Mich. Mechanical movement.	June 21, 1870
	Hammond, Alexander H. (See White, Alexander, assignor.)	
102,392	Hammond, David, and Job Albott, Canton, Ohio. Tubular-arch girder for bridges and other structures.	April 26, 1870
102,393	Same. . . . Tubular-arch girder.	April 26, 1870
102,394	Same. . . . Truss-girder bridge.	April 26, 1870
101,261	Hammond, E. C., Oswego, N. Y. Pump.	Mar. 29, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,082	Hammond, Henry, Hartford, Conn. Portable lubricator .....	Jan. 25, 1870
	Hampson, Joseph. (See Jenks & Fawcett, assignors.) .....	
103,614	Hampton, William R., Fairfield, Ill. Animal-trap .....	Nov. 29, 1870
104,022	Hanauer, Joseph, and Nicholas Sartor, New York, N. Y. Corset-spring .....	June 7, 1870
109,408	Hanchett, Daniel, John C. Dana, and Reuben Stuart, Smithfield, Ill. Velocipede .....	Nov. 23, 1870
107,175	Hanchett, Nelson, Leslie, Mich. Whip-holder .....	Sept. 6, 1870
105,937	Hancock, Henry J., New York, N. Y. Device for transmitting rotary motion .....	Aug. 2, 1870
103,198	Hancock, John C., Charlestown, and Edward P. Richardson, Somerville, Mass. Horse-detaching apparatus .....	July 12, 1870
102,936	Hancock, William S., Chicago, Ill. Broom .....	May 10, 1870
102,395	Hand, Benjamin R., assignor to self, S. J. Eby, and B. S. Trout, Lancaster, Pa. Washing-machine .....	April 26, 1870
106,578	Handsby, Jacob W., Zanesville, Ohio. Head-block for saw-mills .....	Aug. 23, 1870
101,614	Hanes, Joseph H., Cape May, N. J. Self-feeding drill .....	April 5, 1870
	Hanford, J. M. (See Nanny, Oliver T., assignor.) .....	
99,433	Hanford, Melancthon, Boston, Mass. Elevator .....	Feb. 1, 1870
98,958	Hanger, Jacob A. and George C., Churchville, Va. Churn .....	Jan. 18, 1870
99,184	Hankenson, James W., assignor to self and Winslow Baker, Minneapolis, Minn. Lightning-rod and conductor .....	Jan. 25, 1870
108,354	Hankenson, James W., and Winslow Baker, Minneapolis, Minn. Combined eaves-trough and lightning-rod .....	Oct. 18, 1870
101,008	Hankey, Anthony, assignor to self and George A. Corser, Leicester, Mass. Bed-plate for rag and paper engines .....	Mar. 22, 1870
104,847	Hankin, William, assignor to self and William Henry Hankin, Williamsburgh, N. Y. Saw-frame .....	June 28, 1870
108,589	Hankinson, William H., New York, N. Y. Carpet-beater .....	Oct. 25, 1870
100,525	Hanks, Gordon O., Addison, Vt. Sad-iron heater .....	Mar. 8, 1870
103,739	Hanks, O., Cincinnati, Ohio. Tool-holder .....	May 31, 1870
109,730	Same..... Faucet .....	Nov. 29, 1870
98,587	Hanlon, William, assignor to self, George, Alfred, Frederick, and Edward Hanlon, New York, N. Y. Gymnastic apparatus .....	Jan. 4, 1870
98,588	Same..... Same.....	Jan. 4, 1870
100,030	Hammer, Alonzo, and David Grim; said Hammer assignor to Philip L. Grim, Pittsburgh, Pa. Railway-rail .....	Feb. 22, 1870
109,203	Hammer, Horace H., Nashville, Tenn. Horse and cattle liniment .....	Nov. 15, 1870
102,009	Hanna, Andrew J., New Garden Township, Pa. Single-tree .....	April 19, 1870
107,680	Hanna, Cyrus T., Keokuk, Iowa. Wheat steamer and drier .....	Sept. 27, 1870
110,456	Same..... Flour-bolt .....	Dec. 27, 1870
105,199	Hanna, Francis J., Petroleum Centre, Pa. Rod-coupling .....	July 12, 1870
106,056	Hannahs, James M., Chicago, Ill. Elevated railway .....	Aug. 2, 1870
4,074	Hannen, H. S., assignor to Daniel C. Colby, Thomas Woods, and Benjamin F. Pine, Philadelphia, Pa. Manufacture of white lead .....	July 19, 1870
	Hannen Lead Company. (See Hatfield, Robert F., assignor.) .....	
103,325	Hanning, John G., assignor to self and Rowell R. Rouse, Indianapolis, Ind. Anti-freezing device for pumps .....	May 24, 1870
108,476	Hannon, John H., Halifax, N. C. Cotton plow and planter .....	Oct. 18, 1870
104,145	Hannum, Joseph L., and Samuel H. Stebbins, Berea, Ohio. Fire-kindling .....	June 14, 1870
1,3,740	Hansen, Andrew M., Stockton, Cal. Excavating-machine .....	May 31, 1870
98,589	Hansen, August, San Francisco, Cal. Lounge-bed .....	Jan. 4, 1870
105,449	Hanson, David D., Weare, N. H. Elevator .....	July 19, 1870
109,731	Hanson, John, England. Breech-loading fire-arm .....	Nov. 29, 1870
103,454	Hanson, John F., and John E. Callaway, Barnesville, Ga. Seed-dropper .....	May 24, 1870
	Hanson, L. E., et al. (See Hamilton & Hanson) .....	(Reissue.)
98,959	Hanson, Mary J., Mauston, Wis. Medical compound .....	Jan. 18, 1870
110,232	Hanvey, Thomas, Elma, N. Y. Barrel .....	Dec. 20, 1870
	Hapgood & Co. (See Lane, John, assignor.) .....	
	Hapgood, Charles H., et al. (See Lane, John, assignor.) .....	(Two cases.)
	Harbster Brothers & Co. (See Griscom, William M., assignor.) .....	(Design.)
	Harbster, Matthew, and C. Blust. (See Blust & Harbster, assignors.) .....	
105,675	Harbster, Matthew, assignor to Harbster Brothers & Co., Reading, Pa. Bolt .....	July 26, 1870
106,933	Harcourt, Joseph F., Cincinnati, Ohio. Tackle-block .....	Aug. 30, 1870
104,952	Harding, E. B., Northampton, Mass. Truss .....	July 5, 1870
	Harding, George Ed. (See Philip, Frank, assignor.) .....	
	Harding, James. (See Keefer, William M., assignor.) .....	
98,492	Harding, Jones, Detroit, Mich. Rein-holder .....	Jan. 4, 1870
105,570	Harding, Thomas, La Fayette, Ind. Shovel-tooth for cultivator .....	July 19, 1870
100,755	Harding, William W., Philadelphia, Pa. Paper-making machine .....	Mar. 15, 1870
106,361	Hards, John B., Chicago, Ill. Wheel-hub .....	Aug. 16, 1870
106,057	Hards, John B., and William Hodnett, Chicago, Ill. Car-coupling .....	Aug. 2, 1870
101,873	Hardy, Anson, Boston, Mass. Paper-cutting machine .....	April 12, 1870
104,584	Hardy, Charles, Biddeford, Me. Grinding ledger and fly-blades, planer-knives, &c .....	June 21, 1870
105,202	Hardy, Charles C., Rutland, N. Y. Machine for sharpening reaper-knives .....	July 26, 1870
104,585	Hardy, Dexter D., and Ed. E. Wood, assignors to Philander H. and Francis M. Roots, Cincinnati, Ohio. Blower .....	June 21, 1870
104,023	Hardy, Emery E., Joliet, Ill. Harness-saddle .....	June 7, 1870
104,303	Hardy, Emery E., and Napoleon Dubrul, Joliet, Ill. Corn-planter .....	June 14, 1870
102,001	Hare, C. C., Kansas City, Mo. Sheet-metal bending-machine .....	April 19, 1870
	Hare, John H., et al. (See Hitchcock, Robert, assignor.) .....	(Reissue.)
104,146	Hare, Otway P., Petersburg, Va. Liniment .....	June 14, 1870
106,934	Hares, Thomas A., assignor to self and Cornelious Van Ness. New York, N. Y. Corset-spring .....	Aug. 30, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,125	Hargrave, Thomas C., Boston, Mass. Liquid-meter. (Antedated March 15, 1870.)	Mar. 22, 1870
	Hargraves, George and Samuel. (See Warren, John L., assignor.)	
4,076	Harington, Charles G., Northville, Mich. School seat and desk. .... (Design) ..	May 31, 1870
105,676	Harington, Charles G., and David Mills, Northville, Mich. School-seat. ....	July 26, 1870
103,176	Harkinson, Charles, Philadelphia, Pa. Radiator for heating-furnaces. ....	May 17, 1870
98,590	Harkness, Hiram W., assignor to Saunders, Frey & Clark, New Britain, Conn. Lawn-mower. ....	Jan. 4, 1870
104,586	Harlan, Aaron W., Croton, Iowa. Device for forming channels in rivers. ....	June 21, 1870
102,115	Harlan, George W., Cincinnati, Ohio. Brick-machine. ....	April 19, 1870
	Harlan, Joseph. (See Davis, William H., assignor.)	
100,399	Harley, Joseph L., Washington, D. C. Plate-printing register. ....	Mar. 1, 1870
107,176	Same. .... Baltimore, Md. Lock for securing stamps upon barrels. ....	Sept. 6, 1870
105,677	Harley, Milton P., Philadelphia, Pa. Chair and lounge. ....	July 26, 1870
107,041	Harlow, Charles F., Boston, Mass. Sewing-machine. (Antedated Aug. 27, 1870) ..	Sept. 6, 1870
110,033	Harlow, DeWitt Clinton, Hannibal, Mo. Washing-machine. ....	Dec. 13, 1870
106,058	Harlow, Uriah R., Farmersville, Cal. Potato-digger. ....	Aug. 2, 1870
99,314	Harly, J. F., Tipton Station, Ohio. Street-lamp. ....	Feb. 1, 1870
99,434	Harman, Jacob M., Orangeville, Pa. Fly-net for horses. ....	Feb. 1, 1870
109,316	Harman, Samuel, La Porte, Ind. Stump-extractor. ....	Nov. 15, 1870
101,729	Harmon, Daniel, Coles County, Ill. Ditching-plow and hedge-grader. ....	April 12, 1870
	Harms, Amos G., and Laurence Morrison. (See Morrison & Harms.)	
104,953	Harner, David S., assignor to self and William T. Carey, Xenia, Ohio. Harvester-dropper. ....	July 5, 1870
	Harner, Matthew, and Rudolph Martin. (See Martin & Harner.)	
107,254	Harply, Jacob H., assignor to self and Ellis L. Spickler, Penn Township, Pa. Gate. ....	Sept. 13, 1870
107,681	Harper, Elijah S., Sutherland Springs, Texas. Washing-machine. ....	Sept. 27, 1870
110,133	Harper, James M., El Paso, Ill. Harrow. ....	Dec. 13, 1870
108,020	Harper, Thomas J., Atlanta, Ga. Sewing-machine. ....	Oct. 4, 1870
	Harpin, Herbert, and James Coulter. (See Coulter & Harpin.)	
109,511	Harpster, Reuben, West Cairo, Ohio. Clod-fender. ....	Nov. 22, 1870
102,815	Harrah, William D., Ira M. Gifford, and Edward T. Johnston, Davenport, Iowa. Grain-binder. ....	May 10, 1870
106,693	Harrier, Henry, Indianapolis, Ind. Corn-plow. ....	Aug. 23, 1870
	Harrington, Daniel. (See Williams, William, assignor.)	
101,730	Harrington, Edward F., assignor to self and John I. Monroe, Boston, Mass. Cork-cutting machine. ....	April 12, 1870
110,134	Harrington, Jackson, assignor to self, Ralph Wheeler, and Jonathan Dart, New London, Conn. Cotton-seed huller. ....	Dec. 13, 1870
107,682	Harrington, John R., assignor to George E. Harrington, Brooklyn, N. Y. Carpet-lining. ....	Sept. 27, 1870
109,512	Harrington, Melvin, Waupun, Wis. Gate and door spring. ....	Nov. 22, 1870
110,034	Harris, Abraham W., Providence, R. I. Device for driving sewing-machines. ....	Dec. 13, 1870
104,954	Harris, Alfred L., Kent, Ohio. Fruit-coring knife. ....	July 5, 1870
105,071	Harris, Andrew R., St. Louis, Mo. Apparatus for signaling the direction of motion of marine engines. ....	July 5, 1870
105,351	Harris, Arthur, New York, N. Y. Mashing-machine. ....	July 12, 1870
	Harris, Asa L., et al. (See Lee, La Fontaine & Harris.)	
99,565	Harris, Burdine, et al. (See Harlinghouse, Cyrus B., assignor.)	
4,349	Harris, Conrad, and Paul W. Zoimer, Cincinnati, Ohio. Door for cannon-stove. ....	Feb. 8, 1870
104,304	Same. .... Coal and wood cooking-stove. .... (Design) ..	Sept. 13, 1870
105,939	Harris, Francis M., Winnamac, Ind. Churn. ....	June 14, 1870
	Harris, George, Weedsport, N. Y. Wheelbarrow-wheel. ....	Aug. 2, 1870
	Harris, George W., and Wilson W. Carey. (See Carey & Harris.) (Three cases.)	
99,889	Harris, H. A., Centre, Texas. Saw-set. ....	Feb. 15, 1870
100,526	Harris, Henry C., Fort Valley, Ga. Cotton-seed planter and fertilizer. ....	Mar. 8, 1870
106,814	Harris, Henry F., and Gaylord P. Pinney, Chicago, Ill. Boot and shoe heel. ....	Aug. 30, 1870
107,255	Harris, Henry J., assignor of one-half interest to Charles F. Harris, Shreveport, La. Multiple-tool. ....	Sept. 13, 1870
	Harris, Isaac Blue, and Hay Downie. (See Downie & Harris.)	
	Harris, I. Campbell, and Benjamin R. Smith. (See Smith & Harris)	
105,450	Harris, James, Boston, Mass. Hydraulic motor. ....	July 19, 1870
110,356	Harris, James, San Francisco, Cal. Gang-plow. ....	Dec. 20, 1870
106,935	Harris, John, Palestine, Ill. Churn-dasher. ....	Aug. 30, 1870
106,155	Harris, Milo, Jamestown, N. Y. Hemmer for sewing-machines. ....	Aug. 9, 1870
109,895	Harris, Orrin F., Norwich, Conn. Medical compound. ....	Dec. 6, 1870
107,485	Harris, Robert Carr, Maple Green, N. B. Snow-plow. ....	Sept. 20, 1870
107,042	Harris, Samuel H., Chicago, Ill. Safe-case for books. ....	Sept. 6, 1870
107,043	Same. .... Frame for safe-cases for papers. ....	Sept. 6, 1870
103,877	Harris, Thomas J., Guntown, Miss. Cotton-scraper or cultivator. ....	June 7, 1870
108,260	Harris, Venando P., Greensburgh, Ind. Cultivator. ....	Oct. 11, 1870
	Harris, V. P. (See Weathers, James, assignor.)	
98,865	Harris, Washington, Philadelphia, Pa. Non-conducting covering for boilers, steam-pipes, &c. ....	Jan. 18, 1870
102,116	Harris, Washington, and William Howell, Philadelphia, Pa. Non-conducting covering for steam-boilers. ....	April 19, 1870
101,963	Harris, William, and Adam Woolever, Allentown, Pa. Converting cast iron into steel. ....	April 12, 1870
103,741	Harris, William, and Daniel Hall, Chicago, Ill. Apparatus for enameling sheet-iron. ....	May 31, 1870
100,031	Harris, William M., Dixon, Ill. Halter. ....	Feb. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, invention or discovery.	Date.
	Harrison, Charles, <i>et al.</i> (See Jones, Henry, assignor.)	
	Harrison, Edward, and Joseph Leffel. (See Leffel & Harrison.)	
	Harrison, George W., and James T. Mathis. (See Mathis & Harrison.)	
103,326	Harrison, John, and Caleb Low, Fawn Grove, Pa. Condenser for stills .....	May 24, 1870
105,203	Harrison, John D., Middletown, Ohio. Seeding-machine .....	July 12, 1870
100,141	Harrison, Joseph, jr., Philadelphia, Pa. Steam-generator .....	Feb. 22, 1870
	Harrison, Samuel T. (See Fletcher, David R., assignor.)	
101,458	Harrison, Thomas S., Philadelphia, Pa. Drier. (Antedated March 25, 1870.)	April 5, 1870
98,960	Harrison, W. H., Philadelphia, Pa. Joint for metal pipes .....	Jan. 18, 1870
98,961	Same..... Connection for pipes of malleable metal .....	Jan. 18, 1870
	Harrison, William H. (See Rhoads, John, assignor.)	
3,903	Harrop, Henry, Hoboken, N. J. Mode of ornamenting..... (Reissue) ..	April 5, 1870
99,890	Harry, Albert S., Wooster, Ohio. Thill-coupling .....	Feb. 15, 1870
100,619	Harsen, William, Greenpoint, N. Y. Variable cut-off valve-gear .....	Mar. 8, 1870
106,059	Harsha, Mortimer S., and William M. Van Nortwick, Batavia, Ill. Portable stove .....	Aug. 2, 1870
107,486	Harshbarger, Isaac N., Bloomington, Wis. Grain-scourer .....	Sept. 20, 1870
109,992	Hart, Amos W., assignor to self and William M. Tileston, Washington, D. C. Aquatic toy.....	Dec. 6, 1870
100,620	Hart, Calvin, Farmington, Ill. Farm-gate .....	Mar. 8, 1870
100,289	Hart, Charles, Wakefield, Mass. Lantern .....	Mar. 1, 1870
104,024	Hart, Daniel, assignor to self and Jesse Yerks, Romulus, N. Y. Railway-car coupling.....	June 7, 1870
106,362	Hart, Daniel R., St. Louis, Mo. Door for street-cars .....	Aug. 16, 1870
	Hart, George E. (See Kline, Calvin, assignor.)	
110,357	Hart, Hubert C., Unionville, Conn. Mouse-trap.....	Dec. 20, 1870
110,457	Same..... Lawn-mower .....	Dec. 27, 1870
100,756	Hart, Jacob, Savannah, Mo. Rock-drilling machine .....	Mar. 15, 1870
109,006	Hart, James, Sweden Centre, N. Y. Pendulum crushing-mill .....	Nov. 8, 1870
	Hart, James C., and Robert Boyd. (See Boyd & Hart) .....	(Design.)
100,757	Hart, Lewis, Unionville, Conn. Screw-driver .....	Mar. 15, 1870
102,396	Hart, Matthew, Boston, Mich. Machine for sawing shingle-bolts .....	April 26, 1870
99,185	Hart, Robert, Dunkirk, N. Y. Harness-saddle hook .....	Jan. 25, 1870
99,083	Hart, Samuel, Marietta, Ohio. Molding and glazing forms made of plastic materials .....	Jan. 25, 1870
103,044	Hart, Samuel L., Menasha, Wis. Door check and holder .....	May 17, 1870
106,815	Hart, William, Kirksville, Mo. Escapement for watches, &c. ....	Aug. 30, 1870
102,259	Hart, William Henry, Philadelphia, Pa. Holder for neck-ties .....	Apr. 26, 1870
103,606	Hart, William H., New Britain, Conn. Door-bolt .....	May 31, 1870
	Same..... (See Hurford, George S., assignor.)	
4,162	Hart, William H., jr., Philadelphia, Pa. Holder for neck-ties. (Division A, reissue).....	Oct. 25, 1870
4,163	Same..... Box for packing neck-ties. (Division B, reissue) .....	
105,072	Hart, William H., jr., and Hiram H. Thayer, Philadelphia, Pa. Neck-tie holder ..	Oct. 25, 1870
103,455	Harte, Thomas J., assignor to self and James Brandon, New York, N. Y. Detaching-block .....	July 5, 1870
	Hartell & Letchworth. (See Letchworth, John, assignor.) (Three cases.) (Design.)	
	Same..... (See Lair, Philip, assignor.)	
98,766	Harter, John, Colfax, Iowa. Driven well. (Antedated Jan. 6, 1870) .....	Jan. 11, 1870
	Harter, Louis. (See Miner, Henry, assignor.)	
	Hartford Carpet Company. (See Malkin, Levi G., assignor)... (Two cases.) (Design.)	
	Same..... (See Smith, John, assignor)..... (Two cases.) (Design.)	
	Same..... (See Thompson, Henry G., assignor)..... (Nine cases.)	
105,201	Hartje, George, New York, N. Y. Combined hinge and ring for lockets. ....	July 12, 1870
103,607	Hartley, Roger, assignor to the American Coal Barge Company, Pittsburgh, Pa. Coal-barge .....	May 31, 1870
107,364	Hartley, Thomas, Bridgeport, Ohio. Meat-cutter .....	Sept. 13, 1870
109,896	Hartley, William, Durand, Ill. Pump .....	Dec. 6, 1870
110,035	Same..... Rockford, Ill. Piston-rod packing .....	Dec. 13, 1870
	Hartley, William H. (See Propst & Avis, assignors.)	
	Hartman, John E., and Jacob Mickley. (See Mickley & Hartman.) (Two cases.)	
105,672	Hartman, John M., assignor to George W. Whitaker, Philadelphia, Pa. Oven or stove for heating the blast of blast-furnaces .....	July 26, 1870
100,142	Hartmann, C. F., Nazareth, Pa. Wine-press .....	Feb. 22, 1870
102,260	Hartmann, Joachim F., assignor to self and William Morningstave, Richmond, Ind. Converting reciprocating into rotary motion. ....	Apr. 26, 1870
105,938	Hartmann, John R., and Martau Kais, Peoria, Ill. Hat and cap holder and bracket. (Antedated July 28, 1870) .....	Aug. 2, 1870
	Harton, John, and Peter Shellenback. (See Shellenback & Harton.)	
	Harton, Robert S., and John H. Ormsby. (See Ormsby & Harton.)	
3,868	Hartshorn, Sheldon S., assignor to the West Haven Buckle Company, New Haven, Conn. Buckle .....	Mar. 1, 1870
98,591	Hartt, Lionel B., Detroit, Mich. Washing-machine .....	Jan. 4, 1870
	Hartwell, Abraham V., and Insley D. Johnson. (See Johnson & Hartwell.)	
	Hartwell, H. C., <i>et al.</i> (See Burr ridge, William H., assignor.)	
	Hartwell, John B., <i>et al.</i> (See Perkins, Howard, assignor.)	
109,204	Hartz, George, New York, N. Y. Toy-ball. (Antedated Nov. 3, 1870) .....	Nov. 15, 1870
99,670	Hartz, Henry V., and Julius Feiss, Cleveland, Ohio. Knitting-machine.....	Feb. 8, 1870
99,435	Harvey, Charles T., Tarrytown, N. Y. Supporting column for elevated railways ..	Feb. 1, 1870
104,025	Harvey, Irus W., Norwich, Conn. Faucet.....	June 7, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,021	Harvey, James T., and William Dixon, Marysville, Pa. Meat-mangler.....	Oct. 4, 1870
103,603	Harvey, John H., Chanticleer, Ohio. Log-loader.....	May 31, 1870
107,365	Harvey, Moses B., assignor to self and Harrison F. Cook, Stafford, Conn. Hay-tedder.....	Sept. 13, 1870
107,366	Harvie, William, Scotland. Lamp and lantern.....	Sept. 13, 1870
99,084	Harwood, John, Albany, N. Y. Boot-stretcher.....	Jan. 25, 1870
4,376	Harwood, Luther W., assignor to Fuller, Warren & Co., Troy, N. Y. Stove-plate..... (Design).....	Oct. 4, 1870
100,887	Hasbrouck, John S., Tyre, N. Y. Apparatus for elevating and bagging grain.....	Mar. 15, 1870
	Hasbrouck, W. L. (See Tromly, Michael, assignor.)	
105,940	Haskell, Andrew W., Boston, Mass. Lamp-shade.....	Aug. 2, 1870
110,453	Haskell, Charles Allen, Galena, Ill. Corn-planter.....	Dec. 27, 1870
98,962	Haskell, E. F., Sherman, Me. Lantern.....	Jan. 18, 1870
101,009	Haskell, Nathaniel, assignor to self and Joseph F. Steen, San Francisco, Cal. Extracting copper from its ore.....	Mar. 22, 1870
98,767	Haskins, David G., Cambridge, Mass. Gas-heater.....	Jan. 11, 1870
105,073	Haskins, John Brightman, Brooklyn, N. Y. Medical compound.....	July 5, 1870
109,732	Haskins, John F., Fitchburgh, Mass. Air-pump.....	Nov. 29, 1870
110,036	Same..... same..... Nautical alarm.....	Dec. 13, 1870
	Haskins, John P., and A. W. Boomer. (See Boomer & Haskins.)	
	Haskins, Joseph W. (See Hall, William H., assignor.)	
3,893	Haslam, William, assignor to Henry Froemner, Philadelphia, Pa. Spice-mill. (Design).....	Mar. 8, 1870
104,026	Haslup, William, Sidney, Ohio. Water-wheel.....	June 7, 1870
101,010	Hasslock, Hermann W., Nashville, Tenn. Horse-hoe.....	Mar. 22, 1870
100,888	Hastings, A. H., New York, N. Y. Damper for piano-fortes. (Antedated March 5, 1870).....	Mar. 15, 1870
107,902	Hastings, E. Warren, Boston, Mass. Adjustable window-shade.....	Oct. 4, 1870
102,816	Hastings, John B., Ironton, Ohio, and George Hastings, jr., Wheeling, West Va. Rolling-machine.....	May 10, 1870
	Hastings, William A., and Albert Thayer. (See Thayer & Hastings.)	
107,487	Haswell, Andrew J., and John W. Irwin, assignors to selves, Charles E. Wright, and Palmer C. Smith, Circleville, Ohio. Harvester.....	Sept. 20, 1870
106,579	Hatch, Edwin D., Oconomowoc, Wis. Wheel-cultivator.....	Aug. 23, 1870
107,367	Hatch, Francis H., New Orleans, La., and Benjamin R. Hawley, Normal, Ill. Preserving meat.....	Sept. 13, 1870
	Hatch, James H. (See Palmer, Jay R., assignor.)	
108,477	Hatch, William B., Elmira, N. Y. Cushion for car-seats.....	Oct. 18, 1870
104,848	Hatcher, William Z., assignor to self and William L. Lance, Plymouth, Pa. Safety dumping-cage for mines.....	June 28, 1870
104,849	Hatcher, William Z., and William L. Lance, Plymouth, Pa. Rock-drill.....	June 28, 1870
	Hatchman, William, and Frederick Johnson. (See Johnson & Hatchman, assignors.)	
103,327	Hatfield, Aaron L., Clyde, Ohio. Pruning-shears.....	May 24, 1870
100,621	Hatfield, Charles B., assignor to self, Horace B. Hilman, and Joseph and Henry B. Willcox, Philadelphia, Pa. Paper-box machine.....	Mar. 8, 1870
109,125	Hatfield, Robert F., assignor to Hannen Lead Company, New York, N. Y. Manufacture of white lead.....	Nov. 8, 1870
99,566	Hatfield, R. G., New York, N. Y. Anti-friction journal-bearing.....	Feb. 8, 1870
106,156	Hathaway, Amasa, Prairie du Sac, Wisconsin. Farm-gate.....	Aug. 9, 1870
	Hathaway, A., et al. (See Blood, Hathaway & Beach)..... (Reissue.)	
103,178	Hathaway, Baylies, Elizabeth Port, N. J. Spring-balance stop for safety-valves.....	May 17, 1870
	Hathaway, C. (See Wormood, W. W., assignor.)	
107,903	Hathaway, James L., Norfolk, Va. Machine for finishing wheels for watches.....	Oct. 4, 1870
100,758	Hathorn, George C., New York, N. Y. Fare-box for railroad-cars.....	Mar. 15, 1870
106,580	Hathorn, Samuel R., Worcester, Mass. Guard for roofs.....	Aug. 23, 1870
101,011	Hatschek, Moritz, Hungary. Apparatus for producing sulphurous acid.....	Mar. 22, 1870
103,456	Hattersley, Charles, Trenton, N. J. Piano.....	May 24, 1870
99,691	Hattersley, T. S., Trenton, N. J. Split-ring.....	Feb. 15, 1870
104,587	Hatting, John B., assignor to self and Stephen Sherlock, New York, N. Y. Apparatus for treating diseases by means of galvanism.....	June 21, 1870
107,256	Hauck, George, Mechanicsburgh, Pa. Horse hay-rake.....	Sept. 13, 1870
101,459	Haughwout, Eder E., New York, N. Y. Animal-trap.....	April 5, 1870
99,186	Haupt, Herman, Philadelphia, Pa. Drying, preserving, and coloring wood or other fibrous material.....	Jan. 25, 1870
103,328	Same..... Wood-pavement.....	May 24, 1870
99,567	Hausknecht, Gustavus L., Brooklyn, N. Y. Velocipede. (Antedated Aug. 27, 1869).....	Feb. 8, 1870
103,782	Havemeyer, Hector C., and David P. Burdon, New York, N. Y. Leather-scouring machine.....	Nov. 1, 1870
103,783	Same..... Leather-scouring machine.....	Nov. 1, 1870
109,205	Same..... Attaching dicing-stones to wheels for polishing leather.....	Nov. 15, 1870
4,199	Haven, Ezra W., Brandon, Vt. Picture-frame..... (Design).....	July 5, 1870
	Haven, James L., & Co. (See Shannon, Thomas J., assignor.)	
	Same..... (See Lemman, John, assignor)..... (Reissue.)	
108,478	Havens, Abraham, Trenton, N. J. Adjustable harrow.....	Oct. 18, 1870
99,671	Havermale, Noah, Canton, Ill. Shipping and unshipping hooks.....	Feb. 8, 1870
110,359	Same..... Pile and post driver.....	Dec. 20, 1870
104,452	Haviland, George W., Fort Dodge, Iowa. Milking-stool.....	June 21, 1870
104,453	Haviland, John T., San Francisco, California. Instrument for removing twine and wire from bottles.....	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,358	Haviland, John T., San Francisco, Cal. Handle for cutlery, tools, &c.....	Dec. 20, 1870
101,731	Haviland, Richard, assignor to self and Charles Ware, North Branch, Md. Potato-separator .....	April 12, 1870
108,022	Hawes, James, jr. (See Beard, Henry J., assignor.) Hawes, James H., and Orville W. Brock, assignors to James H Hawes. Monrocton, Pa. Revolving fire-cracker pistol .....	Oct. 4, 1870
103,329	Hawes, John H. G., Newark, N. J. Confluent cock .....	May 24, 1870
109,206	Hawes, Washington, Port Richmond, N. Y. Oil-cake packing-apparatus .....	Nov. 15, 1870
102,117	Hawkes, Allen, assignor of one-half interest to Oliver E. Bigelow, Providence, R. I. Pie stamper and cutter .....	April 19, 1870
98,691	Hawkins, Ebenezer, Islip, N. Y. Paper-engine .....	Jan. 11, 1870
101,615	Hawkins, James P. (See Johnson, George W., assignor.) Hawkins, John E., Lansingburgh, N. Y. Bread-machine.....	April 5, 1870
103,609	Hawkins, Moses C., Edinborough, Pa. Tension-device for needle-thread in sewing-machines .....	May 31, 1870
103,610	Same.....Shuttle for sewing-machines .....	May 31, 1870
103,611	Same.....Hemmer for sewing-machine .....	May 31, 1870
104,305	Hawkins, N. F., Chicot County, Ark. Railway-switch.....	June 14, 1870
105,451	Hawkins, Reason, Sugar Creek, Ind. Grain and seed separator .....	July 19, 1870
101,262	Hawkins, Samuel K., and Jacob C. Horton. (See Horton & Hawkins.) (Reissue.) Hawkins, William H., Cleveland, Ohio. Copying-press .....	Mar. 20, 1870
107,612	Hawks, Elizabeth, assignor to George W. Sweet, Julius F. Quimby, Samuel W. Perry, and William E. Marston, Troy, N. Y. Auxiliary air-chamber for stoves, heaters, and furnaces .....	June 6, 1870
107,612	Hawley, Benjamin R., Normal, Ill. Kiln.....	Sept. 20, 1870
110,568	Hawley, Benjamin R., and Francis H. Hatch. (See Hatch & Hawley.) Hawley, George F., Grand Rapids, Mich. Harvester .....	Dec. 27, 1870
106,265	Hawley, Warren G., and George B. Ferry. (See Ferry & Hawley.) Hawley, William H., Utica, N. Y. Bore for casting axle-boxes.....	Aug. 9, 1870
100,622	Hawley, W. W., Mount Morris, N. Y. Self-waiting table .....	Mar. 8, 1870
100,032	Hawn, Guilford, and Abram I. Quackenbush. (See Quackenbush & Hawn.) Haworth, George D., Decatur, Ill. Corn-planter.....	Feb. 22, 1870
109,615	Haworth, John, Philadelphia, Pa. Photographic-print cutter .....	Nov. 29, 1870
102,937	Hax, John P., et al. (See Voss, Hax & Krug.) Hay & Co. (See Woodward, Theodore F., assignor.) (Two cases.) Hay, David B., Dayton, Ohio. Scaffold-supporter .....	May 10, 1870
107,368	Hay, James, and John C. Butterfield. (See Butterfield & Hay.) Hay, Randall D., Crooked Creek, N. C. Process for manufacturing tobacco- plugs.....	Sept. 13, 1870
109,513	Same.....Safety-guard for pistols .....	Nov. 22, 1870
109,514	Same.....Gun-lock.....	Nov. 22, 1870
104,955	Hayden, Charles M., South Thomaston, Me. Steering-apparatus.....	July 5, 1870
3,995	Hayden, Charles W., et al. (See Torney, P. J., assignor).....(Reissue.) Hayden, Hiram W., assignor to the Waterbury Brass Company, Waterbury, Conn. Machine for making kettles..(Division A, reissue) .....	May 24, 1870
3,996	Same.....Brass kettle .....	May 24, 1870
106,363	Hayden, Hiram W., assignor to Holmes, Booth & Hayden, Waterbury, Conn. Lamp-burner.....	Aug. 16, 1870
104,027	Hayden, Joel B., Schaghticoke, N. Y. Rubber door-spring .....	June 7, 1870
100,033	Hayden, Jasper, et al. (See Allen, Record, Rood & Hayden.) Hayden, Martin, Dowagiac, Mich. Grain-drill. (Antedated Feb. 12, 1870) .....	Feb. 22, 1870
100,889	Hayden, Nathan, Chicago, Ill. Extension hat-rack. (Antedated Oct., 11, 1870.) .....	Oct. 25, 1870
107,488	Hayden, Peter, Pittsburgh, Pa. Washing-machine.....	Sept. 20, 1870
105,679	Hayden, William B., Columbus, Ohio. Mode of attaching hold-back rings to hames.....	July 26, 1870
107,613	Same.....Machine for welding chain-links .....	Sept. 20, 1870
101,126	Hayes, E. B., Vergennes, Vt. Clamp.....	Mar. 22, 1870
100,143	Hayes, George, New York, N. Y. Skylight.....	Feb. 22, 1870
106,157	Same.....same.....	Aug. 9, 1870
107,489	Hayes, Joshua R., New York, N. Y. Composition for pavements.....	Sept. 20, 1870
107,490	Same.....Preparation of composition for pavements.....	Sept. 20, 1870
107,904	Same.....Washington, D. C. Preserving wood.....	Oct. 4, 1870
101,012	Hayes, S. C., et al. (See Doubler, John W. H., assignor.) Hayford, Ira, Boston, Mass. Process and apparatus for treating wood .....	Mar. 22, 1870
110,135	Haymond, Thomas E., Morris, Ill. Hay elevator and conveyor.....	Dec. 13, 1870
100,889	Haynes, Cornelius E., Boston, Mass. Packing apparatus .....	Mar. 15, 1870
104,588	Same.....Cooling and producing ice.....	June 21, 1870
109,126	Same.....Preserving beer and ale on draught .....	Nov. 8, 1870
104,732	Haynes, Edgar K., Boston, Mass. Needle-sharpener .....	June 28, 1870
98,592	Haynes, Edgar K., and William C. Murdock. (See Murdock & Haynes.) Haynes, John H., Boston, Mass. Velocipede.....	Jan. 4, 1870
109,897	Haynie, William, Memphis, Tenn. Cotton-press.....	Dec. 6, 1870
100,759	Hays, James, Fostoria, Ohio. Gate .....	Mar. 15, 1870
100,623	Hays, Marshall, Fostoria, Ohio. Water-gate.....	Mar. 8, 1870
105,202	Hays, Thomas S., assignor to self and Philip Miller, Williamsport, Pa. Clip for harness .....	July 12, 1870
110,567	Hayward, Stephen L., and F. W. Frost. (See Frost & Hayward.) Hayward, W. H. (See Perkins, R. W., assignor.) Haywood, John S., Rochester, Minn. Metal roof for buildings.....	Dec. 27, 1870
105,452	Hazard, Arthur P., North Bridgewater, Mass. Shoemakers' edge-plane.....	July 19, 1870
107,491	Same.....same.....	Sept. 20, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,760	Hazard, Thomas H., Richmond, Va. Medical compound from chloral.....	Mar. 15, 1870
104,589	Hazelton, George H., Philadelphia, Pa. Bottom for wash-boilers and similar vessels.....	June 21, 1870
	Hazen, N. M. (See Collinson, Henry, assignor.)	
103,612	Hazen, Nathan S., La Fayette, Ind. Churn.....	May 31, 1870
102,679	Hazlet, William, and William H. Flanigan, Philadelphia, Pa. Coal scuttle and sifter.....	May 3, 1870
100,144	Hazlett, H. K., St. Louis, Mo. Feed-water purifier for steam-generators.....	Feb. 22, 1870
	Hazlett, Hiram K., <i>et al.</i> (See Currie, Daniel, assignor.)	
100,527	Hazlett, James W., New York, N. Y. Ice-chamber for refrigerators.....	Mar. 8, 1870
103,613	Heady, Morrison, Spencer County, Ky. Water-elevator.....	May 31, 1870
4,311	Heald, Alfred, assignor to McCalum, Crease & Sloan, Philadelphia, Pa. Carpet-pattern..... (Design).....	Aug. 30, 1870
4,312	Same..... Carpet-pattern..... (Design).....	Aug. 30, 1870
4,313	Same..... same..... (Design).....	Aug. 30, 1870
4,314	Same..... same..... (Design).....	Aug. 30, 1870
4,493	Same..... same..... (Design).....	Nov. 29, 1870
4,494	Same..... same..... (Design).....	Nov. 29, 1870
106,581	Heald, George W., and Lorenzo D. Sisco, Baldwinsville, N. Y. Rotary pump.....	Aug. 23, 1870
100,290	Heald, H. J., assignor to self and Henry Somers, Birmingham, Conn. Toy.....	Mar. 1, 1870
109,898	Heald, James B., Milford, N. H. Collar for circular saws.....	Dec. 6, 1870
103,742	Heald, Peter, Troy, Me. Wind-wheel.....	May 31, 1870
	Heald, S., and Sons. (See Grandy, Cyrus E., assignor.)	
103,878	Healey, Benjamin W., Providence, R. I. Iron fender-frame.....	June 7, 1870
108,479	Healy, Albert M., Berlin, Conn., and Charles H. Raymond, Woodstock, Vt., assignors to the Southington Cutlery Company. Machine for marking carpenters' squares.....	Oct. 18, 1870
100,145	Healy, Caleb E., New London, Ohio. Hedge and tree trimmer.....	Feb. 22, 1870
	Heaney, Alfred G., and T. G. Liebenau. (See Liebenau & Heaney.)	
103,457	Heard, Joseph M., Aberdeen, Miss. Hat.....	May 24, 1870
104,147	Heath, Elander, San Francisco, Cal. Dovetailing-machine.....	June 14, 1870
109,899	Heath, George, Annapolis, Md. Canal-lock.....	Dec. 6, 1870
110,459	Same..... Canal-lock mechanism.....	Dec. 27, 1870
109,207	Heath, William M., Wataga, Ill. Grape-trellis.....	Nov. 15, 1870
4,081	Heaton, Edward, New Haven, Conn. Shank-spring..... (Reissue).....	July 26, 1870
105,571	Hebard, Albert K., Boston, Mass. Organ-stop.....	July 19, 1870
	Hebard, Benjamin F., and John T. Kimball. (See Kimball & Hebard.)	
100,400	Hebbard, Albert, Springfield, Mass. Machine for making car-springs.....	Mar. 1, 1870
101,460	Hebbard, Ira A., assignor to E. F. Hebbard, Rochester, N. Y. Harvester-cutter.....	April 5, 1870
103,179	Hebbon, William, New York, N. Y. Station-indicator for railroad-cars.....	May 17, 1870
109,208	Same..... Advertising-apparatus.....	Nov. 15, 1870
106,582	Hebel, Charles, Louisville, Ky. Ink or writing-fluid.....	Aug. 23, 1870
104,028	Heberling, John, Mount Pleasant, Ohio. Hand seed-planter.....	June 7, 1870
104,306	Hebert, Alexis, Malone, N. Y. Railway-car coupling.....	June 14, 1870
3,933	Hebron, Stephen, Buffalo, N. Y. Window-blind..... (Reissue).....	April 26, 1870
104,029	Hecht, Ansel, New York, N. Y. Machine for shirring fabrics.....	June 7, 1870
4,525	Same..... Shirred goods..... (Design).....	Dec. 20, 1870
102,118	Heckel, Edward B., Vincent, Pa. Mineral paint.....	April 19, 1870
100,291	Hedden, Horace M., Worcester, Mass. Ferrottype plate.....	Mar. 1, 1870
102,002	Hedell, Christer L., Galesburgh, Ill. Sink and wash-stand.....	April 19, 1870
105,680	Hedges, John R., assignor to self and Valentine & Sparks, Glenwood, N. Y. Horse-power.....	July 26, 1870
	Hedley, Edward, Philadelphia, Pa. Shingle-machine..... (Extension).....	May 16, 1870
110,233	Hedrick, James H., assignor of one-third interest to J. B. Barrett, Wythe County, Va. Repeating cannon.....	Dec. 20, 1870
106,153	Heebner, Josiah D., assignor to self and David S. Heebner, Norritonville, Pa. Manure-drag.....	Aug. 9, 1870
99,315	Hernance, Garet G., Claverack, N. Y. Lock-nut.....	Feb. 1, 1870
3,792	Hernance, Henry S., Lenox, Mass. Umbrella-supporter for vehicles. (Reissue).....	Jan. 11, 1870
106,364	Heffley, William H., assignor to self and David Bark, Rochester, Ind. Machine for turning axletrees.....	Aug. 16, 1870
	Hefly, Joseph, and Thomas B. Penicks. (See Penicks & Hefly.)	
4,219	Hegarty, John, Jersey City, N. J. Fountain..... (Design).....	July 13, 1870
108,135	Hege, Constantine A., Friedburg, N. C. Cane-stripper.....	Oct. 11, 1870
107,683	Hegeler, Edward C., assignor to F. W. Matthiesson & Hegeler, La Salle, Ill. Dumping-car.....	Sept. 27, 1870
102,119	Heger, Jacob, Jefferson, Wis. Stove-pipe drum.....	April 19, 1870
100,624	Heiges, Daniel, Cashtown, Pa. Plow.....	Mar. 8, 1870
	Heilman, Horace B., <i>et al.</i> (See Hatfield, Charles B., assignor.)	
98,493	Heilman, Moses, Lebanon, Pa. Modes of securing lashes in fly-nets.....	Jan. 4, 1870
100,528	Heim, Jacob, New York, N. Y. Evaporating salt brine and other liquids.....	Mar. 8, 1870
102,120	Heine, Joseph, and John Von Ficht, Toledo, Ohio. Faucet.....	April 19, 1870
104,307	Heine, Louis, and Charles Schofield, Philadelphia, Pa. Medicated steam-bath apparatus.....	June 14, 1870
105,572	Heinig, Gustav E., Louisville, Ky. Fruit-can.....	July 19, 1870
102,261	Heinrich, Philip, Allegheny, Pa. Life-boat.....	April 26, 1870
100,035	Heintze, William B., New London, Ohio. Meat-cutter.....	Feb. 22, 1870
103,879	Heintzelman, Nicholas, New York, N. Y. Process for making molds for castings of alto-relievo figures, &c.....	June 7, 1870
	Heintzle, Ludwig, <i>et al.</i> (See Wahler, Metz & Heintzle.)	
100,034	Heinz, Adam, assignor to self, John L. Fisher, and George J. Munschauer, Buffalo, N. Y. Refrigerator.....	Feb. 22, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,816	Heiser, Francis C., Brooklyn, N. Y. Measuring-faucet.....	Aug. 30, 1870
	Heissenbutler, W., <i>et al.</i> (See Himmer, Vitalis, assignor)..... (Two cases.)	
101,732	Heist, John, assignor to self, C. Zink, and H. Spoehrer, New York, N. Y. Machine for coloring paper-hangings.....	April 12, 1870
4,014	Heistad, Hans Christian, Brooklyn, N. Y. Calendar..... (Design.)	May 10, 1870
	Heister, Tobias S., and Nicholas S. Vedder. (See Vedder & Heister)..... (Fourteen cases.) (Design.)	
	Heister, Tobias S., <i>et al.</i> (See Vedder, Ritchie, and Heister)..... (Design.)	
100,761	Heitmann, August G., assignor to self and James Kelly, Brooklyn, N. Y. Floating mill-power.....	Mar. 15, 1870
100,401	Held, Frederic E., Chicago, Ill. Combination of billiard and dining tables.....	Mar. 1, 1870
106,694	Helder, John W., assignor to self and Luther Trescott, Shannon, Ill. Machine for cutting blind-slats.....	Aug. 23, 1870
105,074	Heliker, George, and Abram Burlew, Greenwich, Ohio. Churn-dasher.....	July 5, 1870
109,900	Heller, Daniel, Milton Center, Ohio. Sawing-machine.....	Dec. 6, 1870
	Heller, Jonathan M., <i>et al.</i> (See Taylor, Robert R., assignor.)	
	Helm, John, and Henry G. Tyler. (See Tyler & Helm)..... (Extension.)	
100,890	Helms, Charles H., Poughkeepsie, N. Y. Leather-scarfing machine.....	Mar. 15, 1870
107,369	Same..... Machine for fastening soles.....	Sept. 13, 1870
110,037	Same..... Mode of attaching composition-heels to boots and shoes.....	Dec. 13, 1870
107,614	Helwig, Edward J., assignor to R. M. Robinson & Co., Philadelphia, Pa. Fastening for epaulettes.....	Sept. 20, 1870
101,616	Hemenway, Collier V., assignor to self and A. A. Powers, New London, Ohio. Brick-machine.....	April 5, 1870
110,136	Hemenway, George W., Elmira, N. Y. Well-tubing.....	Dec. 13, 1870
100,625	Hemingway, Abraham, New York, N. Y. Slide-valve.....	Mar. 8, 1870
107,776	Hemingway, Benjamin E., assignor to self and William L. Prince, Portland, Me. Sled.....	Sept. 27, 1870
102,938	Heminway, Allen, and William A. Daggett, Lanais Township, N. J. Baking-pan.....	May 10, 1870
110,360	Hendee, Edwin B., San Francisco, Cal. Gun-lock.....	Dec. 20, 1870
104,733	Henderson, Frederick, assignor to self and George H. Bell, Marietta, Ohio. Shank laster and punch. (Antedated June 23, 1870).....	June 28, 1870
110,460	Henderson, Harry T., and James E. Ladd, Bristol, Conn. Gauge for turning clock-work. (Antedated Dec. 24, 1870).....	Dec. 27, 1870
101,263	Henderson, James, New York, N. Y. Manufacture of iron and steel.....	Mar. 29, 1870
106,365	Same..... same.....	Aug. 16, 1870
	Henderson, James, and Jasper M. Lawford. (See Player, John, assignor.) (Two cases)..... (Reissue.)	
98,963	Henderson, John, Wheeling, West Va. Glass-furnace.....	Jan. 18, 1870
102,121	Same..... Albion, N. Y. Horseshoe.....	April 19, 1870
4,015	Same..... Breast-strap slide..... (Design).....	May 10, 1870
109,409	Henderson, John J., New York, N. Y. Roses for door-knobs.....	Nov. 22, 1870
106,583	Henderson, Leonard, Manson, N. C. Potato-digger.....	Aug. 23, 1870
107,257	Henderson, William H., and Walter S. Jones, Faxon's Switch, Va. Revolving-table.....	Sept. 13, 1870
101,617	Henderson, William M., Philadelphia, Pa. Direct-acting compound steam-ergine.....	April 5, 1870
105,941	Same..... same.....	Aug. 2, 1870
104,030	Hendrick, Eli E., Carbondale, Pa. Setter-gauge and case for sewing-machine needles.....	June 7, 1870
104,148	Same..... Stamp-canceler.....	June 14, 1870
107,044	Hendrick, Joseph E., assignor to self and Philo Brown, Waterbury, Conn. Lubricator.....	Sept. 6, 1870
99,085	Hendrickson, E. M., Brooklyn, N. Y. Burglar-proof safe.....	Jan. 25, 1870
107,492	Hendrickson, Hubbard, Red Bank, N. J. Adjustable arm for working slide-valves.....	Sept. 20, 1870
105,681	Henkel, Eugen, North Scituate, R. I. Cigar-box.....	July 26, 1870
107,253	Henkel, George H., Hartford City, Ind. Table.....	Sept. 13, 1870
106,484	Henley, Henry, Shoals, Ind. Fruit-drier.....	Aug. 16, 1870
108,906	Henney, Michael, and William B. Rager, North Manchester, Ind. Eaves-trough fastener. (Antedated Oct. 22, 1870).....	Nov. 1, 1870
104,590	Henriksen, Hans Peter, assignor to Charles Edward Brosser, Denmark. Sewing-machine.....	June 21, 1870
100,626	Henry, Benjamin T., New Haven, Conn. Carriage-spring.....	Mar. 8, 1870
	Henry, E. T. (See Nolan, James, assignor.)	
101,013	Henry, John, Suisun, Cal. Bolster and axle bed-plate for vehicles. (Antedated March 1, 1870).....	Mar. 22, 1870
101,014	Same..... Wagon-standard. (Antedated Mar. 1, 1870).....	Mar. 22, 1870
4,162	Same..... Millburn, N. J. Frame of a printing-press..... (Design).....	June 21, 1870
104,734	Same..... New York, N. Y. Depilating and tanning hides and skins.....	June 28, 1870
102,003	Henry, Samuel, Genoa, Ill. Gate.....	April 19, 1870
	Henry, Samuel B. (See Wheeler, Sylvester P., assignor)..... (Two cases.)	
	Henson, William S., <i>et al.</i> (See Newsham, Haines, and Henson.)	
106,060	Heptonstall, Charles, assignor to self and Pardon M. Stone, Providence, R. I. Steam-former for shaping and finishing corsets.....	Aug. 2, 1870
104,149	Hepworth, Samuel S., Cold Spring, N. Y. Centrifugal machine.....	June 14, 1870
110,038	Herald, John, Unadilla, N. Y. Core for casting.....	Dec. 13, 1870
103,880	Herbert, John Jacob, Philadelphia, Pa. Loom.....	June 7, 1870
108,591	Herbert, Theodore, Philadelphia, Pa. Potato-planter.....	Oct. 25, 1870
107,493	Herbster, Edward, Chicago, Ill. Stand for cleaning windows.....	Sept. 20, 1870
100,146	Herd, Thomas R., Allegheny, Pa. Railway-car coupling.....	Feb. 22, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,316	Heritage, John H., Wilmington, Del. Culinary steamer .....	Feb. 1, 1870
104,308	Herkimer, Jacob, San Francisco, Cal. Rein-holder .....	June 14, 1870
103,816	Herkner, Henry F., New York, N. Y. Device for closing the ends of coat-sleeves .....	May 31, 1870
105,203	Herman, Ludwig, Detroit, Mich. Fire-extinguisher .....	July 12, 1870
98,961	Hernance, Charles W., Schuylerville, N. Y. Cooking-stove .....	Jan. 18, 1870
103,180	Same..... Culinary vessel .....	May 17, 1870
99,436	Hernance, Levi, Lansingburgh, N. Y. Cooking-stove .....	Feb. 1, 1870
103,881	Hernance, Lewis N., Kingston, N. Y. Bark-mill .....	June 7, 1870
102,539	Hernance, Richard M., Half Moon, N. Y. Stovepipe-damper .....	May 3, 1870
110,039	Same..... Troy, N. Y. Culinary vessel. (Antedated Dec. 1, 1870) .....	Dec. 13, 1870
102,462	Hernance, Richard M., assignor to Joseph B. Wilkinson, Troy, N. Y. Cooking-stove .....	April 26, 1870
101,461	Herold, John, Omaha, Neb. Water-proof composition for harness, leather, &c. ....	April 5, 1870
99,568	Herpers, F. J., and M. M. Sommer, Newark, N. Y. Sheet-music turner and holder .....	Feb. 8, 1870
	Herr, Christian G. (See Baker, Henry, assignor.) .....	
102,817	Herr, Cyrus N., Lampeter, Pa. Adjustable shutter-holder .....	May 10, 1870
100,627	Herreshoff, James B., assignor to Gustavus A. Williamson and Samuel T. Shuttuck, Bristol, R. I. Shuttle for sewing-machines .....	Mar. 8, 1870
109,733	Herrick, Bryant B., assignor of one-half interest to John H. Wallace, Decatur, Mich. Clothes-line fastener .....	Nov. 29, 1870
105,075	Herrick, Charles F., Independence, Iowa. Reversible latch .....	July 5, 1870
102,262	Herrick, Gardner, Albion, Mich. Acupuncture-instrument .....	April 26, 1870
	Same..... (See Burt, Calvin C., assignor.) .....	
4,401	Herriet, Julius, assignor to David Wolfe Bruce, New York, N. Y. Type .....	Oct. 11, 1870
4,402	Same..... same .....	Oct. 11, 1870
4,117	Herriott, Thomas M., and Samuel Myers, South Pittsburgh, Pa. Balance slide-valve .....	Sept. 13, 1870
	Same..... (Reissue) .....	
106,266	Herron, James P., Atlanta, Ga. Railway-switch .....	Aug. 9, 1870
107,370	Same..... Seal for metal straps on boxes .....	Sept. 13, 1870
107,371	Same..... Cotton and hay press .....	Sept. 13, 1870
99,187	Hersee, William, Buffalo, N. Y. Slate-frame .....	Jan. 25, 1870
107,045	Hersey, Thomas, Bangor, Me. Moccasin boots and shoes .....	Sept. 6, 1870
104,031	Hersh, Noah F., assignor to self and A. B. Lerew, Round Hill, Pa. Animal-trap .....	June 7, 1870
98,866	Herthel, George P., jr., St. Louis, Mo. Bridge .....	Jan. 18, 1870
101,127	Hertick, Philip W., Louisville, Ky. Cooking-stove .....	Mar. 22, 1870
102,122	Hertle, Emil T., and Richard Thompson, New York, N. Y. Mechanism for making wire heddles .....	April 19, 1870
102,123	Herzog, August, New York, N. Y. Cover for tables, floors, &c. ....	April 19, 1870
100,891	Heskett, H. H., McLean County, Ill. Lathe for setting jewels in time-pieces .....	Mar. 15, 1870
104,032	Haskett, Harrison H., LeRoy, Ill. Spring-closing cap for oil-cups and ink-stands .....	June 7, 1870
99,086	Heskett, H. H., and Marcus E. Ferguson, McLean County, Ill. Combined base-knob and door-fastener .....	Jan. 25, 1870
106,159	Hess, Jacob Wilson, Montandon, Pa. Railway-car coupling .....	Aug. 9, 1870
108,592	Hess, John M., Philadelphia, Pa. Flower-casket .....	Oct. 25, 1870
99,188	Hess, Solomon F., Rochester, N. Y. Packing-case for tobacco .....	Jan. 25, 1870
3,871	Same..... same .....	Mar. 8, 1870
100,147	Hess, Thomas, West Penn, Pa. Coupling cars .....	Feb. 22, 1870
104,150	Hessemer, Philipp, Washington, D. C. Toy-hoop .....	June 14, 1870
110,461	Hessing, John, Paterson, N. J. Non-conducting compound for coating steam-boilers, &c. ....	Dec. 27, 1870
	Heusner, Emil. (See Moog, Julius, assignor.) .....	
103,330	Heusser, Albert, Ellington, Conn. Box-opener .....	May 24, 1870
110,462	Hewes, Lorenzo N., Swansey, N. H. Machine for cutting the ends of hoops .....	Dec. 27, 1870
110,463	Hewett, J. Austin, Nora Springs, Iowa. Compound and process of removing incrustations of lime from steam-boilers, metals, &c. ....	Dec. 27, 1870
100,892	Hewitt, George S., Boston, Mass. Manufacture of bricks .....	Mar. 15, 1870
	Hewitt, George W., et al. (See Fraser, Furness & Hewitt) .....	
	Hewitt, Horatio J., and William Braidwood. (See Braidwood & Hewitt.) .....	
	Hewitt, John. (See Miller, Edgar T., assignor.) .....	
	Hewitt, S. B., jr., and L. P. Jones. (See Usher, Charles, assignor) .....	
	Hewson, William. (See Miller, Michael, assignor.) .....	
102,597	Hey, Michael, Philadelphia, Pa., Hydraulic air-compressing apparatus .....	April 26, 1870
104,151	Heyl, Henry R., Philadelphia, Pa. Means for mounting croquet-boards. (Antedated May 30, 1870) .....	June 14, 1870
4,118	Same..... Croquet-table .....	Sept. 13, 1870
109,209	Heywood, Edwin C., Worcester, Mass. Spool-stand .....	Nov. 15, 1870
107,372	Heyworth, James O., Chicago, Ill. Wind-wheel .....	Sept. 13, 1870
108,593	Heyworth, James O., and Herman E. Fessel, Chicago, Ill. Wind-wheel .....	Oct. 25, 1870
	Hiatt, Jesse. (See Ward, Aaron, assignor.) .....	
	Hiatt, Nicholas, and Franklin M. Hindman. (See Hindman & Hiatt.) .....	
106,584	Hibbard, Hermon A., Augusta, Mich. Dressing or tawing skins .....	Aug. 23, 1870
108,705	Hibberd, George, Wheeling, W. Va. Pump .....	Oct. 25, 1870
102,398	Hibbs, Adalino D., Trenton, N. J. Stationery-furniture .....	April 26, 1870
100,149	Hickcox, T. N., Brooklyn, N. Y. Metallic roofing .....	Feb. 22, 1870
102,818	Hickman, Henry, Omaha, Neb. Hand corn-planter .....	May 10, 1870
103,743	Hickok, William O., Harrisburgh, Pa. Ruling-machine .....	May 31, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,132	Hickok, William O., Harrisburgh, Pa. Paper-ruling machine .....	June 14, 1870
107,046	Same..... Pen for ruling-machines.....	Sept. 6, 1870
108,480	Hicks, Coleman, Lancaster, Ky. Weather-strip.....	Oct. 18, 1870
103,458	Hicks, Horatio F., Grand View, Ind. Steam-steering apparatus.....	May 24, 1870
107,905	Hicks, Isaac, assignor to self and James O. Kendall, Hartford, Wis. Horse-collar top.....	Oct. 4, 1870
107,047	Hicks, Joseph M., Indianapolis, Ind. Bee-hive .....	Sept. 6, 1870
3,798	Hicks, William Cleveland, Summit, N. J. Breech-loading fire-arm.. (Reissue) ..	Jan. 18, 1870
3,860	Same..... same..... (Reissue) ..	Mar. 1, 1870
99,892	Hidden, E. J., Millburn, N. J. Relay for telegraph-instruments .....	Feb. 15, 1870
99,437	Higgins, George A., New York, N. Y. Chamber-pail .....	Feb. 1, 1870
101,618	Same..... Closet for cake.....	April 5, 1870
103,882	Higgins, George A., <i>et al.</i> (See Averell, Higgins & Gordon, assignors.) Higgins, James, assignor to self and William S. Medaras, Salem Crossing, Ind. Baby-carriage .....	June 7, 1870
108,023	Higgins, John C., Skowhegan, Me. Trip-hammer and anvil-stock .....	Oct. 4, 1870
99,189	Higgins, John H., New York, N. Y. Apparatus for steaming yarn .....	Jan. 25, 1870
100,529	Higgins, Johnson, Friendship, N. Y. Stamp-extractor .....	Mar. 3, 1870
107,906	Same..... same.....	Oct. 4, 1870
104,153	Higgins, Mahlon C. and Gilbert B., Flemington, N. J. Ditching-machine .....	June 14, 1870
105,573	Higgins, Thomas, and Thomas P. Milligan. (See Goddard, Emerson, assignor.) Higham, Enos T., assignor to self and Daniel Higham, Philadelphia, Pa. Shade-cord retainer. (Antedated July 9, 1870) .....	July 19, 1870
102,263	Highfield, Edward. (See Bentley, George J., assignor.) .....	April 26, 1870
99,774	Highley, Enoch, Beechy Mire, Ind. Saw-mill .....	Feb. 15, 1870
101,874	Higley, Aaron, Cleveland, Ohio. Car-truck .....	April 12, 1870
99,190	Same..... Railway-car brake .....	Jan. 25, 1870
103,744	Hildebrand, Henry F., Baltimore, Md. Double wash-board .....	May 31, 1870
109,007	Hildebrand, John, assignor to self and Jacob Fringer, Taneytown, Md. Fruit-drier .....	Nov. 8, 1870
109,901	Hildebrand, William, Fort Wayne, Ind. Awning .....	Dec. 6, 1870
107,048	Hildenbrand, Louis, Michigan City, Ind. Coffee-pot .....	Sept. 6, 1870
4,222	Hildreth, Edwin A., and George E. Burt. (See Burt & Hildreth.) Hildreth, George W., Lockport, N. Y. School-seat .....	Dec. 27, 1870
104,454	Same..... Gang-plow..... (Reissue) ..	June 21, 1870
99,317	Hildreth, Henry A., and William J. Johnson. (See Johnson & Hildreth.) (Design.) .....	Feb. 1, 1870
103,784	Hildreth, Joseph W., Boston, Mass. Machine for boarding leather .....	Nov. 1, 1870
98,655	Hildreth, Royall S., South Adams, Mass. Bit-stock .....	Jan. 4, 1870
103,045	Same..... Vise .....	May 17, 1870
108,261	Hildreth, Royall S., assignor to self and Rufus B. Richmond, South Adams, Mass. Lubricator.....	Oct. 11, 1870
3,927	Hiles, George L., Chicago, Ill. Saw-teeth .....	April 19, 1870
99,893	Hill, Albert M., New Haven, Conn. Reversible knob-latch .....	Feb. 15, 1870
102,264	Hill, B. B., Chicopee, Mass. Hand-stamp..... (Reissue) ..	April 26, 1870
100,762	Hill, Byron R., Cranston, R. I. Revolving fire-arm .....	Mar. 15, 1870
110,361	Hill, Cyrus, Foxcroft, Me. Washing-machine .....	Dec. 20, 1870
101,264	Hill, Daniel, assignor to self and Isaac I. Evans, New Vienna, Ohio. Manure-spreader .....	Mar. 29, 1870
109,515	Hill, David R. P., assignor to self, E. F. and H. H. Weaver, Fredericktown, Pa. Lubricating oil .....	Nov. 22, 1870
109,008	Hill, Edwin H., Worcester, Mass. Tinning and galvanizing wire .....	Nov. 8, 1870
103,459	Hill, Elias, Hamilton, Ill. Baling-press .....	May 2, 1870
100,149	Hill, Frederick B., East New York, N. Y. Box-scraper .....	May 24, 1870
105,332	Hill, George W., Olean, N. Y. Saw-mill dog..... (Extension) ..	Feb. 22, 1870
103,046	Hill, Gilbert P., and Edward C. Dow, East Deering, N. H. Sawing-machine .....	July 12, 1870
103,331	Hill, Jacob W., Jefferson, and Thomas Roberts, Panora, Iowa. Rotary engine .....	Oct. 11, 1870
99,191	Hill, James M., Fairfield, Ill. Churn-dasher .....	Oct. 11, 1870
107,494	Hill, John B., and George S. Koontz. (See Koontz & Hill.) Hill, John R., assignor to self and Henry E. Hill, Hyde Park, Mass. Music-rack .....	May 24, 1870
109,210	Hill, Joseph, assignor to self, M. S. Frost, and E. P. Huyler, New York, N. Y. Galvanic battery .....	Jan. 25, 1870
3,829	Hill, Lysander S., Grand Rapids, Mich. Jewelers' chuck .....	Sept. 20, 1870
101,364	Hill, Nathan H., Cincinnati, Ohio. Extension-lounge .....	Nov. 15, 1870
101,365	Hill, Nathan H., and John K. Coolidge. (See Coolidge & Hill.) Hill, Noah, Leavenworth City, Kans. Railway-rail joint .....	Feb. 8, 1870
102,819	Hill, R. A., assignor of part interest to H. C. Lane, Washington, D. C. Branch stop-cock for mains .....	Mar. 29, 1870
103,883	Hill, Samuel. (See Mooney, John H., assignor.) Hill, Samuel A., and Charles F. Thumm, assignors to selves and Oliver P. Scaife, Oil City, Pa. Still for hydrocarbons. (Antedated Jan. 18, 1870) .....	Mar. 29, 1870
105,204	Same..... Still for hydrocarbons. (Antedated Jan. 18, 1870) .....	May 10, 1870
108,136	Same..... Apparatus for distilling hydrocarbon oils .....	June 7, 1870
108,137	Hill, Thomas, Vallejo, Cal. Steam-ram .....	July 12, 1870
103,332	Same..... Oscillating-engine .....	Oct. 11, 1870
104,455	Same..... Trunnion for steam-engines and calenders.....	Oct. 11, 1870
104,456	Same..... Valve for steam-engines .....	May 24, 1870
108,594	Hill, Warren S., Manchester, N. H. Knitting-machine .....	June 21, 1870
	Hill, William, New York, N. Y. Side-saddle tree.....	June 21, 1870
	Same..... Side-saddle .....	Oct. 25, 1870
	Hill, William, Pottsville, Pa. Machine for securing heads to metallic kegs.....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Hill, W. E. ( <i>See</i> Thomas, William K., assignor.)	
106,160	Hill, William E., Erie, Pa. Machine for turning logs .....	Aug. 9, 1870
99,087	Hilliard, James P., Fall River, Mass. Step for spindles for spinning-machines ..	Jan. 25, 1870
100,402	Hillebrand, Louis, Philadelphia, Pa. Padlock .....	Mar. 1, 1870
100,403	Same..... same .....	Mar. 1, 1870
103,181	Same..... Stay for trunks .....	May 17, 1870
4,205	Same..... Hasp for trunk-locks .....	Dec. 20, 1870
106,817	Hiller, John R., assignor to self and Clark Elliott, Woodland, Cal. Carriage .....	Aug. 30, 1870
103,182	Hilliard, Bindloss H., New London, Conn. Ice-cream freezer .....	May 17, 1870
105,076	Hilliard, Henry, Brooklyn, N. Y. Awning-frame .....	July 5, 1870
110,234	Hillis, William D., Elgin, Ill. Fence .....	Dec. 20, 1870
105,574	Hillman, John J., Philadelphia, Pa. Whip-socket ring .....	July 19, 1870
101,462	Hills, Alfred M., Lowell, Mass. Planing-machine .....	April 5, 1870
	Hills, Ami. ( <i>See</i> Ganyard, Henry O., assignor.)	
106,818	Hills, David, Richville, N. Y. Lime-kiln .....	Aug. 30, 1870
105,077	Hills, George, Plainville, Conn. Setting clock-dials .....	July 5, 1870
109,902	Hillis, Jacob, Haydensville, Mass. Faucet .....	Dec. 6, 1870
103,884	Hillson, Robert, Albany, N. Y. Heating-stove .....	June 7, 1870
103,614	Hillstream, Francis M., Lawrence, Kans. Composition made from coal-tar ....	May 31, 1870
	Hilsman, J. M., <i>et al.</i> ( <i>See</i> Griffith, Howard V., assignor.)	
4,277	Hilton, Samuel F., Providence, R. I. Collar-box .....	Aug. 9, 1870
4,336	Same..... same .....	Sept. 6, 1870
	Same..... ( <i>See</i> Paul, George, assignor.) .....	(Design.)
110,335	Hilton, Alexander, Strathroy, Canada. Washing-machine .....	Dec. 20, 1870
101,128	Himmer, Vitalis, New York, N. Y. Lemon-squeezer .....	Mar. 22, 1870
98,593	Himmer, Vitalis, assignor to self, W. Heissenbuttle, and James McMullen, New York, N. Y. Electric clock .....	Jan. 4, 1870
98,594	Same..... same .....	Jan. 4, 1870
	Hinchman, Joseph C. ( <i>See</i> Prickett, Joshua P., assignor.)	
109,734	Hinckley, Nathaniel, Marston's Hill, Mass. Flood-gate .....	Nov. 29, 1870
108,138	Hindemeyer, Anthony J., assignor to Samuel C. Collins, Philadelphia, Pa. Composition for welding, puddling, and brazing metals .....	Oct. 11, 1870
106,695	Hindman, Franklin M., and Nicholas Hiatt, Sidney, Iowa. Churn .....	Aug. 23, 1870
101,366	Hine, Merritt, assignor to C. Cowles & Co., New Haven, Conn. Machine for threading bolts .....	Mar. 29, 1870
106,585	Hingher, Constantine, New Brunswick, N. J. Coating metal articles with India-rubber .....	Aug. 23, 1870
106,819	Same..... Covering metal articles with India-rubber .....	Aug. 30, 1870
108,139	Same..... Apparatus for finishing terrets .....	Oct. 11, 1870
108,262	Hinkley, Benjamin F., Baltimore, Md. Guano-distributor and seed-sower .....	Oct. 11, 1870
108,140	Hinkley, George M., Milwaukee, Wis. Swaging-machine .....	Oct. 11, 1870
101,875	Hinkley, Jonas, assignor to Hinkley Knitting-Machine Company, Norwalk, Ohio. Knitting-machine .....	April 12, 1870
	Hinkley Knitting-Machine Company. ( <i>See</i> Morse, Edward, assignor.)	
99,088	Hinman, C. F., Chicago, Ill. Manufacture of composition roofs .....	Jan. 25, 1870
106,696	Hinnan, George C., assignor to Levi S. Tower, Boston, Mass. Blotting-pad .....	Aug. 23, 1870
110,040	Hinman, Milan, assignor to self and Robert M. Stone, West Stockbridge, Mass. Lubricator .....	Dec. 13, 1870
110,464	Hinrichs, Charles F. A., New York, N. Y. Lamp .....	Dec. 27, 1870
98,494	Hinsdale, Ezra M., and William Quay. ( <i>See</i> Quay & Hinsdale.)	
	Hintz, John C., assignor to Charles Diebold and Jacob Kiengle, Cincinnati, Ohio. Bolt-work and door for safes .....	Jan. 4, 1870
103,183	Hintz, Julius C., jr., Cincinnati, Ohio. Permutation-lock .....	May 17, 1870
108,481	Same..... same .....	Oct. 18, 1870
3,972	Hipkins, Stephen, jr., assignor to the Belmont Glass Works, Bellair, Ohio. Ornamenting glassware .....	April 12, 1870
102,004	Hippensteel, C., Lee's Cross Roads, Pa. Corn-planter .....	April 19, 1870
	Hird, Isaac, and James T. Brown. ( <i>See</i> Brown & Hird.)	
102,399	Hirsch, Hermann, France. Screw-propeller. (Patented in France Dec. 16, 1865.)	April 26, 1870
101,265	Hirschbühl, Joseph Ignatz, Louisville, Ky. Sewing-machine .....	Mar. 29, 1870
	Hisey, David W., and Elisha H. Goldman. ( <i>See</i> Goldman & Hisey.)	
105,682	Hitchcock, Alonzo, New York, N. Y. Windlass .....	July 26, 1870
103,127	Hitchcock, Charles Nelson, and Henry Pendleton Taylor Wilson, Canton, Miss. Fence. (Antedated Oct. 29, 1870) .....	Nov. 8, 1870
	Hitchcock, Jason, and William Workman. ( <i>See</i> Workman & Hitchcock.)	
107,907	Hitchcock, John G., New York, N. Y. Neck-tie .....	Oct. 4, 1870
	Hitchcock, John G., and Hiram P. Wetmore. ( <i>See</i> Wetmore & Hitchcock.)	
98,965	Hitchcock, M. T., assignor to self and J. W. Labaree, Springfield, Mass. Railroad-car ventilator .....	Jan. 18, 1870
100,404	Same..... Stove for railroad-cars .....	Mar. 1, 1870
4,005	Same, assignor to J. W. Labaree, Springfield, Mass. Car-ventilator. (Reissue.)	May 31, 1870
3,910	Hitchcock, Robert, assignor to self, Henry D. Carroll, and John H. Hare, Springfield, Mass. Railroad-car ventilator .....	April 12, 1870
	Hitselberger, Charles F., Libertytown, Md. Smoking-pipe .....	Sept. 20, 1870
100,150	Hitt, Edgar, Poundridge, N. Y. Lock for wagon-seats .....	Feb. 22, 1870
107,049	Hitselberger, Christopher, South Orange, N. J. Hobby-horse .....	Sept. 6, 1870
100,530	Hix, Wiley B., Rome, Ga. Flue for dry-houses. (Antedated March 2, 1870) .....	Mar. 8, 1870
105,078	Hoadley, John C., Lawrence, Mass. Steam-engine .....	July 5, 1870
109,211	Hoag, George M., Muscatine, Iowa. Potato-digger .....	Nov. 15, 1870
	Hoagland, Abraham. ( <i>See</i> Matteson, Elisha, assignor.)	
	Hoagland, William C., <i>et al.</i> ( <i>See</i> Reed, Hoagland & Newsom.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,595	Hoard, Isaac L., Bristol, R. I. Thread-spool .....	Oct. 25, 1870
	Hoard, John W. (See Wiggin, George B., assignor.)	
106,937	Hobart, Randolph D., assignor to self and J. V. Simmons, Binghamton, N. Y. Sash and blind machine .....	Aug. 30, 1870
3,828	Hobbs, J. H., Wheeling, W. Va. Ornamenting glassware..... (Design) ..	Feb. 1, 1870
102,124	Same..... Sirup-pitcher.....	April 19, 1870
103,460	Same..... Lamp.....	May 24, 1870
98,495	Hobbs, J. S., and L. R. Elder, West Falmouth, Me. Brick-machine.....	Jan. 4, 1870
	Hobill, I. N. (See Davis, N. C., assignor.)	
101,129	Hobson, Mary, Williamsburgh, Mo. Dish-washer.....	Mar. 22, 1870
105,423	Hockabout, Benjamin, Antioch, Cal. Washing-machine .....	July 19, 1870
101,130	Hockett, Amos, Wilmington, Ohio. Paper-file.....	Mar. 22, 1870
108,907	Hodge, Ephraim C., Onconta, N. Y. Reversible plow .....	Nov. 1, 1870
108,263	Hodge, Perry, Seneca Falls, N. Y. Dry gas-meter.....	Oct. 11, 1870
103,184	Hodges, James Wilson, Baltimore, Md. Steam-trap.....	May 17, 1870
103,185	Hodges, Pliny F., Moline, Ill. Combined rake and reel for harvesters.....	May 17, 1870
103,186	Same..... same.....	May 17, 1870
103,615	Hodgetts, Charles, Williamsburgh, N. Y. Coal-scuttle.....	May 31, 1870
	Hodgkin, John Eliot. (See Brasier, Edward, assignor.)	
	Hodgkins, Samuel T. (See Purchase, Thomas E., assignor.)	
	Hodgman, Alfred C. (See Fowler, Samuel W., assignor.)	
	Hodgman, M. M., and A. Van Camp. (See Van Camp & Hodgman.) (Two cases.)	
109,317	Hodgson, Charles, England. Apparatus for transporting loads on wire-rope ....	Nov. 15, 1870
4,526	Hodgson, Joseph, assignor to Thomas Dolan, Philadelphia, Pa. Woven shawl-fabric..... (Design) ..	Dec. 20, 1870
4,527	Same..... Woven shawl-fabric..... (Design) ..	Dec. 20, 1870
4,528	Same..... same..... (Design) ..	Dec. 20, 1870
105,942	Hodgson, Mark, Saginaw, Mich. Grate-bar. (Antedated July 19, 1870) .....	Aug. 2, 1870
	Hodnett, William, and John B. Hards. (See Hards & Hodnett.)	
99,192	Hoe, Peter S., New York, N. Y. Battery for electrotyping.....	Jan. 25, 1870
	Hoe, R., & Co. (See Tucker, Stephen D., assignor)..... (Reissue.)	
	Same..... (See De Puy, Alexander T., assignor.)	
	Hoe, Richard M., New York, N. Y. Printing-press..... (Disclaimer) ..	July 22, 1870
	Same..... same..... (Extension) ..	July 23, 1870
3,893	Hoe, Richard M., assignor to R. Hoe & Co., New York, N. Y. Printing-press. (Reissue) ..	Mar. 22, 1870
108,785	Hoe, Richard M., and Stephen D. Tucker, New York, N. Y. Printing-press....	Nov. 1, 1870
109,212	Hoefler, William L., Jeffersonville, N. Y. Bottle-stopper.....	Nov. 15, 1870
3,934	Hoeller, C., assignor to self and Henry Samuel Hoeller, Cincinnati, Ohio. Stove-pipe elbow..... (Reissue) ..	April 26, 1870
102,125	Hof, Johann, and Philipp Brenneis, Baltimore, Md. Hinge for shutters.....	April 19, 1870
99,672	Hofer, William, New Haven, Conn. Writing-desk.....	Feb. 8, 1870
105,683	Hofferberth, John, Baltimore, Md. Oil-still.....	July 26, 1870
4,004	Hoffheimer, Max, Philadelphia, Pa. Brand..... (Design) ..	May 3, 1870
100,036	Hoffman, Austin D., assignor to self and Charles H. Morse, Chicago, Ill. Registering-punch for railroad-conductors.....	Feb. 22, 1870
100,037	Hoffman, Austin D., assignor to Charles H. Morse, Chicago, Ill. Till-alarm.....	Feb. 22, 1870
104,033	Hoffman, Daniel, Noblestown, and William Johnston, Havelock, Pa. Nut-lock.....	June 7, 1870
102,265	Hoffman, Isaac, assignor to Mary and Mary C. Hoffman, Oregon, N. Y. Manufacture of paper.....	April 26, 1870
110,236	Hoffman, Jacob R., Fort Wayne, Ind. Saw-mill.....	Dec. 20, 1870
104,735	Hoffman, Lewis G., Albany, N. Y. Ash-sifter.....	June 23, 1870
100,763	Hoffman, Robert N., Chicago, Ill. Window-cornice.....	Mar. 15, 1870
100,628	Hoffmann, Theodore A., Beardstown, Ill. Aspirator for preventing overheating of grain, &c.....	Mar. 8, 1870
98,769	Hofmann, Ernst F., New York, N. Y. Pessary.....	Jan. 11, 1870
102,400	Hogan, Patrick J., Cincinnati, Ohio. Detachable saw-teeth.....	April 26, 1870
100,629	Hogel, Hascal A., assignor to self and Cosmore G. Bruce, New York, N. Y. Treating blood for the preparation of fertilizers and for other purposes.....	Mar. 8, 1870
101,131	Same..... Brooklyn, N. Y. Fertilizer.....	Mar. 23, 1870
110,137	Hogeland, Israel, Indianapolis, Ind. Clothes-drier.....	Dec. 13, 1870
	Hogg, William, jr. (See Crabtree, Jonathan, assignor) .. (Two cases) .. (Design.)	
4,142	Hoggson, Samuel J., New Haven, Conn. Hand-stamp..... (Design) ..	June 7, 1870
	Hoglin, George W., et al. (See Miller, Charles G., deceased, by Christina Julia Miller, his administratrix, and Benjamin Kersting.)	
	Hogoboom, Peter, and William Pearson. (See Pearson & Hogoboom) .. (Design.)	
106,161	Hoisington, Seth B., Galesburgh, Ill. Cultivator.....	Aug. 9, 1870
105,205	Hoit, Lara B., Cedar Falls, Iowa. Guard for ax-handles.....	July 12, 1870
109,213	Holbrook, Charles W., and E. Frederick Butler, Windsor Locks, Conn. Portable book-clamp.....	Nov. 15, 1870
108,355	Holbrook, Edward, jr., Louisville, Ky. Tobacco-casing machine.....	Oct. 18, 1870
	Holbrook, Franklin F. (See Matthews, Elbridge G., assignor) .... (Two cases.)	
103,187	Holbrook, Frederick, Brattleborough, Vt., James A. Howe and Joel Nourse, Boston, Mass., assignors to Joel Nourse, Boston, Mass. Swivel-plow.....	May 17, 1870
103,461	Holbrook, Samuel Elliot, jr., Charlestown, Mass. Countersink.....	May 24, 1870
104,591	Holcomb, Andrew L., Hopewell, N. J. Corn-planter and fertilizer.....	June 21, 1870
110,465	Holcomb, Frederick A., assignor to self and Samuel B. Jenks, Grand Rapids, Mich. Manufacture of leather.....	Dec. 27, 1870
109,128	Holden, Cyrus B., assignor to self and Isaac Fiske, Worcester, Mass. Gun-lock.....	Nov. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,876	Holden, D. L., New Orleans, La. Apparatus for the manufacture of ice.....	April 12, 1870
98,966	Holden, Edward, England. Apparatus for combing and preparing wool, &c.....	Jan. 18, 1870
	Holden, James B., and Richard B. Hamel. (See Hamel & Holden, assignors.)	
	Holden, Joel M. (See Simonds, Warren A., assignor.)	
	Holden, Luther L. and Stoughton B. (See Smith, Timothy, assignor.)	
	Holden, Stoughton B. and Luther L. (See Keller, Matthias, assignor.)	
102,680	Holden, William G., jr., Covington, Ky. Refrigerator.....	May 3, 1870
104,309	Holdiman, Daniel, Waterloo, Iowa. Metal sleigh-runner.....	June 14, 1870
	Holland, Dwight, <i>et al.</i> (See Fiske, Henry J., assignor.)	
102,540	Holland, Frank D., assignor to Henry J. Holland, Lewiston, Me. Shoe-brush....	May 3, 1870
107,908	Holland, Hezekiah R., Wilmington, Va. Corn-planter.....	Oct. 4, 1870
99,894	Holland, Timothy, New York, N. Y. Lubricator.....	Feb. 15, 1870
105,943	Holland, William H., Boston, Mass. Paddle-wheel.....	Aug. 2, 1870
105,575	Hollar, Caswell, Abingdon, Ind. Combined corn-plow and grain-drill.....	July 19, 1870
104,850	Holley, John H., Brooklyn, N. Y. Tobacco-pipe machine.....	June 28, 1870
105,454	Hollen, Joseph, Pottsville, Pa. Knitting-machine.....	July 19, 1870
107,684	Hollenbeck, Charles F., Kirkville, Mo. Wagon-seat.....	Sept. 27, 1870
106,485	Hollenberry, Frank, assignor to self and John C. Frizell, Frizellburgh, Md. Hoisting-jack.....	Aug. 16, 1870
104,592	Holley, Alexander L., Brooklyn, N. Y. Lining Bessemer converters.....	June 21, 1870
106,162	Same..... Apparatus for the manufacture of Bessemer steel.....	Aug. 9, 1870
109,151	Holley, Edgar E., New York, N. Y. Mast of vessels.....	Feb. 22, 1870
103,462	Holliday, Isaac, assignor to self and Gevert Papo, Brooklyn, N. Y. Bit-stock....	May 24, 1870
108,706	Holling, Armine A., Pultneyville, N. Y. Square-sail for fore-and-aft vessels....	Oct. 25, 1870
102,266	Hollinger, George, and Samuel H. Fry, Rothsville, Pa. Stove-pipe damper.....	April 26, 1870
101,877	Hollingsworth, John W., Mount Vernon, Ind. Mold for metals.....	April 12, 1870
103,188	Same..... Metal-injector.....	May 17, 1870
103,189	Same..... Artificial teeth.....	May 17, 1870
103,333	Hollmann, Charles, Union Hill, N. J. Laying malting-floors.....	May 24, 1870
109,903	Holloway, George P., and William J. Huey, Portland, Ind. Machine for beating and cleaning hair.....	Dec. 6, 1870
110,041	Holloway, Josephus F., Cleveland, Ohio. Semi-rotary valve.....	Dec. 13, 1870
4,085	Holly, Birdsill, Lockport, N. Y. Water-supply regulator for water-works. (Division A, reissue).....	Aug. 2, 1870
4,086	Same..... Water-supply regulator for water-works. (Division B, reissue)....	Aug. 2, 1870
4,087	Same..... same..... (Division C, reissue).....	Aug. 2, 1870
108,264	Holman, David O., assignor of one-half interest to T. P. Saunders, Adams, N. Y. Pump.....	Oct. 11, 1870
108,265	Holman, David O., Adams, N. Y. Pump.....	Oct. 11, 1870
108,482	Same..... Water-wheel.....	Oct. 18, 1870
109,318	Holman, George, Waterville, N. Y. Clothes-line reel.....	Nov. 15, 1870
	Holmes, Booth & Hayden. (See Atwood, Lewis J., assignor.)	
	Same..... (See Johnson, James H., assignor.)	
	Same..... (See Hayden, Hiram W., assignor.)	
	Same..... (See Dunn, John, assignor.)	
105,684	Holmes, Britain, Buffalo, N. Y. Dumping-wagon.....	July 26, 1870
103,463	Holmes, Charles and Frank E., Boston, Mass. Machine for scouring or dressing hides.....	May 24, 1870
109,009	Holmes, Charles E. L., New York, N. Y. Preparation of peat.....	Nov. 8, 1870
100,405	Holmes, Charles E. L., assignor to George Hovey & Son, New York, N. Y. Fluting-machine.....	Mar. 1, 1870
100,292	Holmes, Charles Patterson, Gouverneur, N. Y., and Albert L. Howell, Mohawk, N. Y. Churn.....	Mar. 1, 1870
110,362	Holmes, Edwin, New York, N. Y., and Henry C. Roome, Jersey City, N. J. Electro-magnetic envelope for safes, vaults, &c.....	Dec. 20, 1870
104,851	Holmes, Francis M., Boston, Mass. Folding-chair.....	June 28, 1870
105,079	Same..... same.....	July 5, 1870
	Holmes, Henry L. and John R. Jerauld. (See Jerauld & Holmes.)... (Design.)	
99,318	Holmes, Horace H., assignor to self, J. D. Dale, Ira S. Beers, and J. H. Dale, Elmira, N. Y. Railway-car replacer.....	Feb. 1, 1870
98,867	Holmes, James G., Charleston, S. C. Stop for the hinged frame of reclining-chairs.....	Jan. 18, 1870
106,586	Holmes, John A., Shopierre, Wis. Show-case.....	Aug. 23, 1870
	Same..... (See Wright, Thomas, assignor.)	
107,050	Holmes, Thomas, Williamsburgh, N. Y. Dough and cake mixer.....	Sept. 6, 1870
106,587	Holmes, Thomas J., Malden, Mass. Atomizing-tube.....	Aug. 23, 1870
	Holmes, William, <i>et al.</i> (See Leake, James, assignor.) (Two cases.)... (Design.)	
	Holmes, W. S. and Robert H., <i>et al.</i> (See Stuart, William M., assignor.)	
101,015	Holms, Laurence, Paterson, N. J. Metallic beam. (Antedated March 5, 1870)...	Mar. 22, 1870
103,885	Holt, Edward W., Corinna, Me. Lamp-shade supporter.....	June 7, 1870
	Holt, James D. (See Casseday, James, assignor.)	
102,267	Holt, John, Lowell, Mass. Signal and other flags.....	April 26, 1870
105,455	Same..... Press-dyeing.....	July 19, 1870
3,930	Holt, John F., assignor to Woonsocket Rubber Company, Woonsocket, R. I. Roller for clothes-wringers..... (Reissue).....	April 19, 1870
105,685	Holt, John P., Cleveland, Ohio. Steam-gauge.....	July 26, 1870
99,895	Holt, M. L., and L. C. Abbott, Eaton, Ohio. School desk and seat.....	Feb. 15, 1870
104,154	Holt, Rufus C., Morehouse Parish, La. Cotton-chopper.....	June 14, 1870
3,849	Holt, Walter, Brooklyn, N. Y. Toy steam-engine.....	Feb. 15, 1870
	Holt, Warren H. (See Parkhurst, Stephen K., assignor.) (Two cases.)	
102,541	Holt, Wilson, Dawson, Ga. Cotton-chopper.....	May 3, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,685	Holton, Francis H., Brooklyn, N. Y. Chair and furniture tips.....	Sept. 27, 1870
100,152	Holzach, Frederick, New Orleans, La. Quadrant and sextant.....	Feb. 22, 1870
105,686	Holzberger, John, Newark, N. J. Mitering-machine.....	July 26, 1870
102,542	Holzer, Edward R., Philadelphia, Pa. Scaffold. (Antedated April 29, 1870)....	May 3, 1870
	Homire, Daniel. (See King, Norman, assignor.)	
102,543	Homrighouse, Louis, Fairfield County, Ohio. Cultivator-plow.....	May 3, 1870
107,777	Homrighouse, Louis, Baltimore, Ohio. Cultivator.....	Sept. 27, 1870
98,496	Honsinger, Abram W., Rome, N. Y. Furnace for deoxidizing iron ore.....	Jan. 4, 1870
105,206	Honsinger, Josiah, assignor to Benjamin Honsinger, Harrisburgh, Pa. Sash-holder.....	July 12, 1870
100,893	Hood, Benjamin L. and Henry O., and Ezra W. Clark, jr., Washington, D. C. Elevated railway.....	Mar. 15, 1870
	Hood, Cornelius. (See Pencille, Jethro, assignor.)	
107,259	Hood, Joel, Milwaukee, Wis. Machine for husking corn.....	Sept. 13, 1870
	Hood, J. M. (See Dougherty, Eliphalet, assignor.)	
102,268	Hook, Albert H., New York, N. Y. Manufacture of India-rubber belts.....	April 26, 1870
102,269	Hooker, Horace B., Rochester, N. Y. Skate-fastening.....	April 26, 1870
	Hooker, John D. (See Garcin, Leon Paul, assignor.)	
108,786	Hooker, William C., Abington, Ill. Gate.....	Nov. 1, 1870
109,904	Hooker, William Davis, San Francisco, Cal. Direct-acting steam-engine.....	Dec. 6, 1870
101,132	Hooper, William, Ticonderoga, N. Y. Ore-separator.....	Mar. 22, 1870
99,673	Hooper, William J. and Theodore, and Orazio Lugo, Baltimore, Md. Apparatus for drying fish and other substances.....	Feb. 8, 1870
99,896	Hooper, William J. and Theodore, Baltimore, Md. Treating fish and animal matter to obtain oils, fats, and other products.....	Feb. 15, 1870
105,207	Hooton, James S., New Carlisle, Ind. Feed-water heater for locomotives.....	July 12, 1870
105,208	Same..... Crab for hand-hole plates.....	July 12, 1870
105,209	Same..... Feed-water filter.....	July 12, 1870
105,333	Hooton, Marsena M., assignor to self and Burden Pullen, Clinton County, Ill. Apparatus for catching curculios.....	July 12, 1870
	Hoover, John R., and George Davis. (See Davis & Hoover.)	
107,260	Hoover, Reuben, Vernon Centre, Minn. Stove-pipe band and shelf.....	Sept. 3, 1870
107,909	Hope, James G., Topeka, Kans. Projectile.....	Oct. 4, 1870
3,849	Hope, John and Thomas, assignors through mesne assignments to selves and Heber Le Favour, Providence, R. I. Machine for engraving calico-printers' rollers..... (Reissue).....	Feb. 22, 1870
98,497	Hopkins, C., Philadelphia, Pa. Drilling, riveting, and watch-jeweling apparatus. (Antedated Dec. 30, 1869).....	Jan. 4, 1870
109,319	Hopkins, D. A., Jersey City, N. J. Journal-bearing.....	Nov. 15, 1870
104,310	Hopkins, Enoch, Newaygo, Mich. Bed-bottom.....	June 14, 1870
110,237	Hopkins, George E., and William B. Shedd, Boston, Mass. Machine for preparing fiber from sisal grass and like substances.....	Dec. 20, 1870
106,820	Hopkins, George M., and John A. Straight, Albion, N. Y. Low-water indicator.....	Aug. 30, 1870
106,821	Same..... Low-water and high-pressure indicator.....	Aug. 30, 1870
109,735	Same..... Safety-tube for lamps.....	Nov. 29, 1870
106,822	Hopkins, Hiram, Wellfleet, Mass. Broom-crotch supporter.....	Aug. 30, 1870
99,193	Hopkins, Joseph W., assignor to self and William H. M. Pye, Brooklyn, N. Y. Air-pump.....	Jan. 25, 1870
104,457	Hopkins, Richard H., Hinsdale, N. H. Auger.....	June 21, 1870
105,334	Hopkins, William A., New York, N. Y. Reversible knob-latch.....	July 12, 1870
	Hopkins, William A., et al. (See Kehoe, Edward J., assignor.)	
102,820	Hoppe, F., assignor to Theodor Kahu, Germany. Combined latch and lock....	May 10, 1870
103,886	Hopper, Thomas and Hatfield, and Chandler C. Coats, Newark, N. J. Railway-car brake.....	June 7, 1870
105,944	Hopson, Alfred Henry, Taylorville, Ill. Trace-buckle.....	Aug. 2, 1870
100,630	Hopson, George, Bridgeport, Conn. Machine for punching the leaves of elliptic springs.....	Mar. 8, 1870
	Hormann, Ferdinand, and Frederick Rohrbacher. (See Rohrbacher & Hormann.)	
98,770	Hornbeck, Cornelius F., Slatersville, N. Y. Car-coupling.....	Jan. 11, 1870
109,819	Hornbeck, Cornelius F., and William J. Carns, Slatersville, N. Y. Snow-plow.....	Dec. 6, 1870
104,956	Horne, William E., Decatur, Ill. Hedge-trimmer.....	July 5, 1870
104,957	Hornor, James, assignor to self and John Cox, New York, N. Y. Method of rolling metal-bars.....	July 5, 1870
101,463	Hornfager, William C., and Edmond A. Warren, Brooklyn, N. Y. Reclining-chair.....	April 5, 1870
110,466	Hornig, Julius L., Chicago, Ill. Propulsion of canal-boats.....	Dec. 20, 1870
106,061	Horning, Robert A., Lanark, Ill. Rotary pump.....	Aug. 2, 1870
107,496	Hornsby, John, Woodbridge, N. J. Kiln for burning tiles, pipes, &c.....	Sept. 20, 1870
	Horsford, E. N., Cambridge, Mass. Pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes. (Extension).....	April 12, 1870
104,034	Same..... Manufacture of a non-hygroscopic pulverulent acid phosphato.....	June 7, 1870
104,311	Same..... Manufacture of beverages for medicinal and other purposes.....	June 14, 1870
100,894	Horter, George, assignor to self, Thomas K. Peterson, and Edward C. Fenner, New Orleans, La. Saddle.....	Mar. 15, 1870
101,619	Same..... Horse-collar.....	April 5, 1870
105,080	Same..... Riding-saddle.....	July 5, 1870
105,081	Same..... Bridle for harness.....	July 5, 1870
99,897	Horton, B. F., Ithaca, N. Y. Horse hay-rake.....	Feb. 15, 1870
105,210	Horton, Emmet, Dundee, N. Y. Clapboard-gauge.....	July 12, 1870
	Horton, E. B., et al. (See Wells, William, assignor.)	
98,498	Horton, Henry B., assignor to self and Hervey Platts, Ithaca, N. Y. Arrangement of pendulum in calendar-clocks.....	Jan. 4, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,206	Horton, Jacob C., New York, N. Y., and Samuel K. Hawkins, Lansingburgh, N. Y., assignors to the Manhattan Meter Company. Meter..... (Reissue)..	Dec. 20, 1870
4,187	Horton, James M., assignor to the Miller's Falls Manufacturing Company, Chicago, Ill. Auger-handle..... (Reissue)..	Nov. 29, 1870
104,155	Horton, John, New York, N. Y. Standard for drop-lights.....	June 14, 1870
100,406	Horton, Marcus L., Windsor, Vt. Coal-stove.....	Mar. 1, 1870
110,467	Same..... Fire-box for stoves and ranges.....	Dec. 27, 1870
103,190	Horton, William H., Jersey City, N. J. Compensating-regulator for watches.....	May 17, 1870
	Horton, William H., and Israel Farjeon. (See Farjeon & Horton.)	
109,010	Horwitz, William, New York, N. Y. Liquid glue. (Antedated Oct. 28, 1870)...	Nov. 8, 1870
105,456	Hoskin, Richard, Dutch Flat, Cal. Pipe-coupling.....	July 19, 1870
107,261	Hoskins, Darlington, Philadelphia, Pa. Bed-bottom.....	Sept. 13, 1870
110,363	Hoskins, Henry R., Harlan, Ind. Gate.....	Dec. 20, 1870
104,958	Hotchkiss, Albert G., Wolcottville, Conn. Boring-tool.....	July 5, 1870
101,620	Hotchkiss, Isahel A., Sharon, Conn. Mouse-trap.....	April 5, 1870
108,024	Same..... Snap-hook.....	Oct. 4, 1870
98,499	Hotchkiss, Bennet, assignor to self and W. J. Clark & Co., Fair Haven, Conn. Thill-coupling.....	Jan. 4, 1870
99,898	Hotchkiss, B. B., New York, N. Y. Breech-loading fire-arm.....	Feb. 15, 1870
99,899	Same..... Primer for eartridges.....	Feb. 15, 1870
105,335	Hotchkiss, Burritt M., assignor to Goodyear India-Rubber Glove Manufacturing Company, Naugatuck, Conn. Machine for making tubes and strips of India-rubber.....	July 12, 1870
108,908	Same..... Dress-shield.....	Nov. 1, 1870
	Hotchkiss, Julius. (See Savage, Elliot, assignor.)	
99,438	Hotte, George, New York, N. Y. Coffee-pot.....	Feb. 1, 1870
104,312	Hotz, Conrad, assignor to Paul Corbet & Lessieux, Switzerland. Machine for making paper tubes.....	June 14, 1870
98,595	Houel, Jules César, and Ferdinand Louis Felix Caillet, France. Gun-carriage.....	Jan. 4, 1870
104,736	Hough, George W. and William S., Galva, Ill. Dumping-machine.....	June 23, 1870
107,778	Hough, James T., New York, N. Y. Locking-cap for bottles. (Antedated Sept. 26, 1870).....	Sept. 27, 1870
98,868	Hough, William J., Martinez, Cal. Oar.....	Jan. 18, 1870
108,909	Houghton, Carlos P., Georgetown, D. C. Manufacture of fertilizers.....	Nov. 1, 1870
	Houghton, Charles, et al. (See Palmer, Palmer & Houghton.)	
	Houghton, Charles, and Charles W. Palmer. (See Palmer & Houghton.)	
102,401	Houghton, George, Stephen Moore, and Homer Rogers, assignors to Stephen Moore and Homer Rogers, Sudbury, Mass. Shank-stiffener.....	April 26, 1870
110,364	Houlker, Christopher, Frankford, Pa. Purifying oil which has been used in lubricating machinery.....	Dec. 20, 1870
102,005	Houpt, John, Springtown, Pa. Steam-condenser.....	April 19, 1870
3,999	Same..... Steam-condenser..... (Reissue)	May 31, 1870
105,457	Same..... Condenser for marine-engines.....	July 19, 1870
109,616	Same..... Steam-generator.....	Nov. 29, 1870
99,674	House, Charles D., Lake Village, N. H. Twisting tubes for spinning.....	Feb. 8, 1870
98,500	House, Henry A., Fair Haven, Conn. Knitting-machine.....	Jan. 4, 1870
98,771	Same..... Bridgeport, Conn. Sewing-machine.....	Jan. 11, 1870
109,617	Same..... Adding and subtracting registers.....	Nov. 29, 1870
109,618	Same..... Automaton rope-walker.....	Nov. 29, 1870
109,619	Same..... Garter.....	Nov. 29, 1870
109,736	Same..... same.....	Nov. 29, 1870
109,737	Same..... same.....	Nov. 29, 1870
101,016	House, Henry A., assignor to self and Frank Armstrong, Bridgeport, Conn. Method of producing selvages on machine-knit stockings, &c.....	Mar. 22, 1870
101,878	Same..... Knitting-machine.....	April 12, 1870
100,764	House, James A., Bridgeport, Conn. Feeding-mechanism for sewing-machines.....	Mar. 15, 1870
101,266	House, Jonas, Howard, N. Y. Combined seeder and hay-tedder.....	Mar. 29, 1870
103,334	House, Mark W., Cleveland, Ohio. Feed-trap for lamps.....	May 24, 1870
107,051	Housel, Benjamin F., and Simeon O. Thayer, Winona, Minn. Machine for making tubular lightning-conductors.....	Sept. 6, 1870
108,141	Houseman, Peter, and Caleb C. Campbell, Smythe County, Va. Butchers' knife.....	Oct. 11, 1870
99,569	Houston, G. A., Beloit, Wis. Water-wheel.....	Feb. 8, 1870
107,910	Hover, Joseph Eves, Philadelphia, Pa. Cement for paving and building.....	Oct. 4, 1870
102,402	Hovey, Francis, New York, N. Y. Cider-press.....	April 26, 1870
	Hovey, George, & Son. (See Holmes, Charles E. L., assignor.)	
104,593	Hovey, Philo B., New London, Conn. Duplex pressure-gauge.....	June 21, 1870
106,163	How, Woodbury Storer, Cincinnati, Ohio. Balance.....	Aug. 9, 1870
100,293	Howard, Catherine E., San Gabriel, Cal. Manufacture of artificial flowers.....	Mar. 1, 1870
99,319	Howard, Charles, West Hurley, N. Y. Horse hay-rake.....	Feb. 1, 1870
108,787	Howard, Charles W., Philadelphia, Pa. Ruffler for sewing-machines.....	Nov. 1, 1870
104,594	Howard, D. S., Lyons Falls, N. Y. Dredging-machine.....	June 21, 1870
103,745	Howard, Edmund, Flushing, N. Y., and William H. Jackson, Brooklyn, N. Y. Button-holing and over-seaming attachment for sewing-machines.....	May 31, 1870
110,569	Howard, Elijah Leavitt, assignors to George Augustus Whiting, Malden, Mass. Mechanism for operating sewing-machines.....	Dec. 27, 1870
	Howard, E. L., and Thomas Leavitt. (See Leavitt & Howard.)	
102,006	Howard, Hiram L., Mendon, Mich. Bolt-cutter.....	April 19, 1870
98,967	Howard, James L., Hartford, Conn. Car-door lock.....	Jan. 18, 1870
100,038	Howard, James Spooner, assignor to self, E. Adams, jr., T. E. Grover, and N. Carpenter, Mansfield, Mass. Electro-plating with antimony.....	Feb. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,823	Howard, James S., assignor to T. E. Grover, E. Adams, jr., and N. Carpenter, Mansfield, Mass. Coloring gun-barrels .....	Aug. 30, 1870
103,335	Howard, Leonard D., St. Johnsbury, Vt. Saw-buck .....	May 24, 1870
106,824	Howard, Lewis and Charles, Watkins, N. Y. Propeller .....	Aug. 30, 1870
103,616	Howard, William H., Media, Pa. Temple for looms .....	May 31, 1870
99,900	Howard, W. T., and Oliver Reeder, assignors to Oliver Reeder and Samuel R. Waite, Baltimore, Md. Oyster-dredge windlass .....	Feb. 15, 1870
100,294	Howarth, John, Salem, Mass. Steam blower and exhauster .....	Mar. 1, 1870
103,788	Howe, Albert K., assignor to self, H. E. Donor, and Edward Purdy, New York, N. Y. Apparatus for drying and pressing lard-scrapings .....	Nov. 1, 1870
3,835	Howe, Bigelow & Co. (See Collier, William F., assignor.) Howe, Elias, jr., deceased, by Alden B. Stockwell, administrator, New York, N. Y. Medal of Elias Howe, jr. .... (Design) .....	Feb. 1, 1870
100,407	Howe, Ephraim. (See Gardner, Smith, assignor.) Howe, Frederick Webster, assignor to Henry G. Thompson and Reune Martin, Providence, R. I. Machine for sewing books .....	Mar. 1, 1870
	Howe, George W., et al. (See Comstock, Francis M., assignor.) Howe, Harry, and Frederick C. Poole. (See Poole & Howe.) .....	
103,047	Howe, Henry, Council Bluffs, Iowa. Truss .....	May 17, 1870
109,129	Howe, Henry, Oncontia, N. Y. Cultivator. (Antedated Oct. 29, 1870) .....	Nov. 8, 1870
	Howe, James A., et al. (See Holbrook, Howe & Nourse, assignors.) .....	
100,765	Howe, John M., Rochester, N. Y. Knitting-machine .....	Mar. 15, 1870
98,968	Howe, S. Charles, Allen's Prairie, Mich. Sawing-machine .....	Jan. 18, 1870
100,438	Howe, Tyler, assignor to self and Otis Howe, Cambridgeport, Mass. Spring bed-bottom .....	Mar. 1, 1870
103,617	Howe, William B., Troy, N. Y. Self-acting lubricator .....	May 31, 1870
	Howell, Albert L., and Charles P. Holmes. (See Holmes & Howell.) Howell, Charles M., Andover, N. J. Wagon-brake .....	Jan. 25, 1870
99,194	Howell, Daniel G., Danby, N. Y. Extensible advertising-frame .....	Feb. 8, 1870
99,675	Howell, Daniel Y., et al. (See Eberts, Herman F., assignor.) Howell, Daniel Y., assignor to Thomas S. Sprague and Herman F. Eberts, Toledo, Ohio. Device for freezing fish, meats, &c. ....	Dec. 6, 1870
109,820	Howell, David, assignor to self and Charles A. Lowe, St. Helena, Cal. Combined harvester and thrasher .....	Jan. 25, 1870
99,089	Howell, George, Baltimore, Md. Reading and writing stand .....	Jan. 18, 1870
98,869	Howell, George, Philadelphia, Pa. Device for filling low lands. (Antedated Dec. 9, 1870) .....	Dec. 27, 1870
110,468	Howell, James R., assignor to Benjamin A. Stevens, Buffalo, N. Y. Miter-machine .....	June 21, 1870
104,458	Howell, Julius R., Atlanta, Ga. Railway-switch .....	June 14, 1870
104,156	Howell, Thomas, Morgantown, W. Va. Seed-sower .....	May 24, 1870
103,464	Howell, William, and Washington Harris. (See Harris & Howell.) Howland, George L. and William M., Topsham, Me. Stump-extractor .....	May 3, 1870
102,544	Howland, James, Rock Falls, Ill. Road-scraper .....	Jan. 18, 1870
98,969	Howlett, Edwin J., and Susan Kirk, assignors to Edwin J. Howlett, Philadelphia, Pa. Tool for manufacturing paper bags. .... (Reissue) ..	June 14, 1870
4,029	Hoxsie, David K., deceased, by Esek Tallman and Nicholas G. Hoxsie, administrators, assignors to Waterbury Brass Company and American Flask and Cap Company, Providence, R. I. Die for forming eyelets .....	Aug. 30, 1870
106,938	Same..... Machine for cutting out the ends of eyelets. ....	Aug. 30, 1870
106,939	Hoyt, Albert S., Winona, Minn. Grain-binder. (Antedated Dec. 3, 1870) .....	Dec. 13, 1870
110,138	Hoyt, Ezekiel B., et al. (See Wolcott, Henry E., assignor) .....	
103,465	Hoyt, Henry I., Norwalk, Conn. Machine for generating and carbureting hydrogen gas .....	May 24, 1870
98,501	Hoyt, Jacob, assignor to James O. Morse, New York, N. Y. Lead-pipe coupling .....	Jan. 4, 1870
99,570	Hoyt, Joseph B., New York, N. Y. Furnace .....	Feb. 8, 1870
	Hoyt, Rufus L. (See Mead, May & Hoyt.) Hubbard, Benjamin R., Hillsborough, Ill. Sulky-plow .....	Sept. 6, 1870
107,052	Hubbard, Charles, jr. (See Jones, James O., assignor.) Hubbard, Duncan C., Point Coupee Parish, La. Cotton-harvester .....	July 12, 1870
105,211	Hubbard, George M., and Frederick W. Judd. (See Judd & Hubbard.) Hubbard, George W., and William E. Conant, assignors to William H. Guild and William F. Garrison, Brooklyn, E. D., N. Y. Operating slide-valve in direct-acting engines .....	Mar. 22, 1870
3,885	Hubbard, Hiram W., and Francis P. Follet, Hartford, Conn. Hand-stamp. (Design) .....	April 12, 1870
3,967	Hubbard, Lorenzo, et al. (See Farrington, George K., assignor.) Hubbard, M. G., Syracuse, N. Y. Harvester-gearing for changing speed. ....	Feb. 1, 1870
99,439	Hubbard, Robert, et al. (See Snyder, William B., assignor.) Hubbard, Robert, and William B. Snyder. (See Snyder & Hubbard.) Hubbard, William H., New Haven, Conn. Water-wheel .....	May 10, 1870
102,939	Hubbard, Wilson J., Ansonia, Conn. Joint for fishing-rods .....	Mar. 15, 1870
100,895	Hubbell, Algernon S., Providence, R. I. Umbrella-frame .....	Sept. 13, 1870
107,374	Hubbell, Arthur Y., Elmira, N. Y. Fluting-machine .....	Nov. 29, 1870
109,738	Hubbell, Jerome B., Naugatuck, Conn. Wagon-hub .....	Sept. 20, 1870
107,497	Hubbell, John H., West Salem, Ohio. Wash-board .....	Feb. 8, 1870
99,676	Hubbell, Monroe, Reynoldsville, N. Y. Grain-thrashing and clover-hulling machine .....	Aug. 2, 1870
105,945	Hubbell, Saunders, jr., West Salem, Ohio. Wash-board .....	May 3, 1870
102,545	Hubbell, William W., Philadelphia, Pa. Smelting and refining iron .....	Feb. 8, 1870
99,677		

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,821	Huber, Joseph, assignor to self and Solomon Brunswick, St. Louis, Mo. Cue-cutting machine.	May 10, 1870
108,142	Huddart, George Augustus, Wales. Railway-rail joint	Oct. 11, 1870
	Huddart, George Augustus, and Charles Eaton Spooner. (See Spooner & Huddart.)	
99,195	Hudner, Frank, New York, N. Y. Railway-car axle	Jan. 25, 1870
103,011	Hudson, Charles H., and Joel Bowker, assignors to Charles H. Hudson, New York, N. Y. Rocker-chair	Nov. 8, 1870
104,157	Hudson, Edward J., Golconda, Ill. Cotton-seed planter	June 14, 1870
107,686	Hudson, E. P., assignor to New York Water-Proof Paper Company, New York, N. Y. Apparatus for preparing parchment or water-proof paper	Sept. 27, 1870
107,687	Same..... Manufacture of rubber-coated parchment-paper	Sept. 27, 1870
4,132	Hudson, Edward P., assignor to the Hudson Ore-Refining Company, New York, N. Y. Furnace for roasting ores. (Reissue)	Sept. 27, 1870
187,779	Hudson, Isaac, and William Minshall, Great Britain. Self-acting tilt for barrels	Sept. 27, 1870
	Hudson, Miller B., and Philip H. Rose. (See Rose & Hudson.)	
98,596	Hudson, Thomas Smith, East Cambridge, Mass. Filtering-apparatus for pipes	Jan. 4, 1870
3,964	Same..... Manufacture of inkstands. (Reissue)	May 10, 1870
	Huey, William J., and Joshua Bishop. (See Adair, John J., assignor.)	
	Huey, William J., and George P. Holloway. (See Holloway & Huey.)	
103,191	Hufeland, Philip, New York, N. Y. Sand-papering machine	May 17, 1870
103,466	Same..... Strip-press	May 24, 1870
103,746	Same..... Machine for grooving lead-pencil blanks	May 31, 1870
	Hufeland, Philip, <i>et al.</i> (See Warth, Hufeland & Braun, assignors.)	
	Hufeland, Philip, and Philip Schrag. (See Schrag & Hufeland.)	
106,588	Huff, Joseph, Ironton, Mo. Liquid measure and funnel	Aug. 23, 1870
103,143	Huffer, Abraham, Hagerstown, Md. Hinge	Oct. 11, 1870
107,911	Huffman, John W., Fremont, Ind. Machine for tenoning spokes	Oct. 4, 1870
	Hufner, Abraham, <i>et al.</i> (See Sehner, Nathaniel, assignor.)	
103,618	Hugg, George C., Berlin, N. J. Railway-car coupling	May 31, 1870
109,410	Hughes, Alice M., Hudson City, N. J. Diaper	Nov. 23, 1870
	Hughes, Edward J. (See Ramsey, Henry B., assignor.)	
104,959	Hughes, Frank C., Frankfort, Ky. Filter-supporter	July 5, 1870
99,901	Hughes, John, New Berne, N. C. Attachment for lamp-chimneys	Feb. 15, 1870
103,048	Same..... Lamp-extinguisher	May 17, 1870
106,486	Same..... Journal-box	Aug. 16, 1870
108,483	Same..... Ladder	Oct. 18, 1870
109,012	Same..... Extension-scaffold	Nov. 8, 1870
109,516	Same..... Sash-lock	Nov. 22, 1870
104,459	Hughes, John, Saxton, Pa. Piston-packing	June 21, 1870
104,313	Hughes, John A., Tindall, Mo. Hay shelf or rack for wagons	June 14, 1870
106,062	Hughes, John B., Terre Haute, Ind. Tile-machine	Aug. 2, 1870
106,589	Hughes, Joseph, Bloomington, Ill. Machine for repairing boiler-flues	Aug. 23, 1870
103,887	Hughes, Seymour, Hudson City, N. J. Metal-roofing	June 7, 1870
106,825	Same..... Roofing	Aug. 30, 1870
4,198	Same..... Metallic roofing. (Reissue)	Dec. 13, 1870
103,409	Hughes, Thomas G., Elysian, Minn. Wash-boiler	Mar. 1, 1870
	Hughes, William, and Horace T. Smith. (See Smith & Hughes.)	
	Hughes, William, and Joseph W. Gillespie. (See Gillespie & Hughes.)	
100,486	Hagunin, Robert B., Cleveland, Ohio. Sash-holder	Mar. 1, 1870
104,314	Same..... same	June 14, 1870
4,365	Same..... New York, N. Y. Sash-supporter	Dec. 20, 1870
4,143	Hulbert, Edward, William F. Steele, and Henry C. Day, Gloversville, N. Y. Thumb of gloves	June 7, 1870
99,902	Hulbert, Edwin James, Portland, Conn., and N. Aubin, Canada. Adjustable dial for travelers' watches	Feb. 15, 1870
101,621	Hulbert, John, jr., Richmond, Ind. Portable furnace	April 5, 1870
105,687	Hulett, Daniel S., Gloversville, N. Y. Glove	July 26, 1870
100,410	Hull, Abraham C., assignor to self and J. C. Cameron, St. Louis, Mo. Broiler	Mar. 1, 1870
99,440	Hull, A. J., assignor to Novelty Iron-Works Manufacturing Company, Sterling, Ill. School-desk	Feb. 1, 1870
102,546	Hull, Charles Wager, New York, N. Y. Manufacture of soap	May 3, 1870
101,622	Hull, Daniel H., assignor to self and J. B. Savage, Plantsville, Conn. Boiler and washing-machine	April 5, 1870
110,042	Hull, Duane, Brooklyn, N. Y. Refining and decolorizing sirups and other liquids, and in material for the same	Dec. 13, 1870
101,464	Hull, Elias H., Warren, Ohio. Cannon-pinion for watches	April 5, 1870
101,465	Same..... Saw-mill	May 5, 1870
102,547	Hull, James H., Irasburg, Vt. Weather-strip	April 3, 1870
105,336	Hull, James J., Brooklyn, N. Y. Wrench	July 12, 1870
103,192	Hull, John W., Connorsville, Ind. Horse hay-fork	May 17, 1870
108,144	Hull, Joseph Clark, Meadville, Pa. Window-washer and scrubbing-pad	Oct. 11, 1870
101,267	Hull, Liverus, assignor to Tucker Manufacturing Company, Charlestown, Mass. Spring-bed	Mar. 29, 1870
102,007	Hull, Liverus, assignor to American Whip Company, Charlestown, Mass. Whip	April 19, 1870
103,467	Same..... same	May 24, 1870
101,733	Hull, Maurice C., New York, N. Y. Heating-stove	April 12, 1870
107,375	Hull, William W., Ashland, N. Y. Irrigating-machine	Sept. 13, 1870
109,620	Humbert, Alfred, assignor to self and Gustavus Gigon, Philadelphia, Pa. Combining keys with watches	Nov. 29, 1870
107,912	Humble, Robert, Milwaukee, Wis. Life-boat	Oct. 4, 1870

*Alphabetical list of patents for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,315	Humes, James H., assignor to self, R. M. Thompson, and L. H. Griffin, East Saginaw, Mich. Clamping-machine .....	June 14, 1870
105,458	Humiston, Willis and Horace N., Troy, N. Y. Soap-cutting machine .....	July 19, 1870
99,903	Hummer, Herbert A., Frenchtown, N. J. Grain-separator .....	Feb. 15, 1870
4,088	Humphrey, Eugene. (See Spear, Charles E., assignor.)	
101,623	Humphrey, Harriet A., Milwaukee, Wis. Hair-crimper .....	(Design) May 31, 1870
4,144	Humphrey, Robert, West Troy, N. Y. Horse-collar .....	April 5, 1870
108,596	Humphrey, William H., Lansingburgh, N. Y. Tile .....	June 7, 1870
109,517	Hundley, Daniel R., Mountain Home, Ala. Pocket-cutlery .....	Oct. 25, 1870
99,196	Hungerford, George W., Chicago, Ill. Washing-machine .....	Nov. 22, 1870
	Hunlock, Jameson, Wyoming Valley, Pa. Hold-back for carriages .....	Jan. 25, 1870
	Hunt, Caleb C., <i>et al.</i> (See Van Slooten, Hunt & McCulloch.)	
	Hunt, Charles C. (See Rinkle, David, assignor.)	
	Hunt, David F. (See Woodbury, Leander S., assignor.)	
107,913	Hunt, Edmund S., Weymouth, Mass. Machine for making fan-sticks .....	Oct. 4, 1870
106,826	Hunt, Eli, Hartford, Ind. Portable fence .....	Aug. 30, 1870
103,336	Hunt, Francis W., Brooklyn, N. Y. Refrigerator .....	May 24, 1870
100,896	Hunt, Frederic R., Leavenworth, Kans. Pipe-coupling for heating and ventilating railroad-cars .....	Mar. 15, 1870
100,897	Same..... Package band and fastener .....	Mar. 15, 1870
103,619	Hunt, Frederick P., Northborough, Mass. Chain-pump bucket .....	May 31, 1870
3,965	Hunt, George G., Quincy, Ill. Base-burning stove .....	(Reissue) May 10, 1870
104,158	Same..... Bristol, Ill. Stove illuminator .....	June 14, 1870
100,531	Hunt, George P., United States Navy. Tube-fastener for steam-generators .....	Mar. 8, 1870
107,498	Hunt, Henry C., Amboy, Ill. Sash-holder .....	Sept. 20, 1870
109,905	Hunt, Henry C., Indianapolis, Ind. Hay-press .....	Dec. 6, 1870
110,238	Hunt, Henry H., Saratoga Springs, N. Y. Hoisting-apparatus .....	Dec. 20, 1870
107,499	Hunt, Joshua, Providence, R. I. Life-preserving mattress .....	Sept. 20, 1870
101,734	Hunt, Joshua, and Albert Stockwell, Providence, R. I. Picker for looms .....	April 12, 1870
	Hunt, Joshua, and Hezekiah Macon. (See Macon & Hunt.)	
109,320	Hunt, Lewis B., New York, N. Y. Railway-car wheel .....	Nov. 15, 1870
110,043	Hunt, Marshall J., Rising Sun, Md. Burglar-alarm .....	Dec. 13, 1870
104,737	Hunt, Ralph, assignor to Daniel M. Strogie, Milford, N. J. Burial-case .....	June 28, 1870
109,411	Hunt, Robert Finley, Washington, D. C. Dentists' rest. (Antedated Nov. 5, 1870) .....	Nov. 22, 1870
105,082	Hunt, Rodney, assignor to Hunt, Waite & Flint, Orange, Mass. Machine for fulling cloth .....	July 5, 1870
	Hunt, Rodney, <i>et al.</i> (See Waite, James H., assignor.)	
	Hunt, Waite & Flint. (See Hunt, Rodney, assignor.)	
	Hunt, Walter, deceased, by Polly Hunt, Jersey City, N. J., and George W. Hunt, Newburgh, N. Y., administrators. Shirt-collar .....	(Extension) Mar. 31, 1870
107,500	Hunt, William, Oskaloosa, Iowa. Compound machine for upsetting, punching, and cutting metal .....	Sept. 20, 1870
106,940	Hunt, William H., Bolton, Conn. Railroad-car ventilator .....	Aug. 30, 1870
107,053	Hunter, David James, Boston, Mass. Separating stones, &c., from clay, &c. .....	Sept. 6, 1870
107,054	Hunter, Edward, assignor of one-half interest to Henry H. Gallup, Norwich, Conn. Tea-pot or water-heater .....	Sept. 6, 1870
99,904	Hunter, James, Philadelphia, Pa. Obtaining madder extract .....	Feb. 15, 1870
101,735	Same..... Apparatus for extracting madder .....	April 12, 1870
	Hunter, J. B., and E. Edward Earll. (See Earll & Hunter.)	
101,466	Hunter, James E., North Adams, Mass. Hand-drilling machine .....	April 5, 1870
110,139	Hunter, Joseph H., Pennington Point, Ill. Farmers' boiler .....	Dec. 13, 1870
101,624	Hunter, Oliver E., assignor to Thomas M. Jenkins, Key Port, N. J. Manufacture of steel .....	April 5, 1870
98,870	Hunter, Robert, Charleston, S. C. Wrecking-tongs or excavators .....	Jan. 18, 1870
107,376	Hunter, Robert, New York, N. Y. Propeller .....	Sept. 13, 1870
	Hunter, Susan M., <i>et al.</i> (See Coon, S. Park, assignor.)	
100,153	Huntington, Abel H., assignor to William McKee, Galesburgh, Ill. Signal-apparatus .....	Feb. 22, 1870
100,766	Huntington, John, Cleveland, Ohio. Condenser and lime-extracting heater .....	Mar. 15, 1870
101,736	Huntley, William W., and Alpheus Babcock, assignors to W. W. Huntley and Frank Swift, Silver Creek, N. Y. Machine for separating flour from bran .....	April 12, 1870
106,827	Huntley, George M., Grand Rapids, Mich. Barrow .....	Aug. 30, 1870
109,739	Same..... Package for lard, butter, &c. .....	Nov. 29, 1870
103,747	Huntoon, Franklin Trueman, Fulton City, Ill. Compound for cleaning cloth and other fabrics .....	May 31, 1870
107,378	Huntoon, James W., Washington, D. C. Combined corn husker and sheller and grain thrasher and cleaner .....	Sept. 13, 1870
107,379	Huntoon, James W., Montgomery, Ala. Horse-power .....	Sept. 13, 1870
	Huntoon, Joseph W., <i>et al.</i> (See Lawrence, Walden & Huntoon.)	
109,013	Huntoon, Reuben K., assignor to J. Augustus Lynch, Wakefield, Mass. Governor for steam-engines .....	Nov. 8, 1870
99,678	Huntsman, E. N., assignor to self, William M. Clancy, I. L. Miller, and James T. Blair, Allegheny, Pa. Railway-car brake. (Antedated Jan. 31, 1870) .....	Feb. 8, 1870
105,212	Hupp, George W., Elwood, Ind. Clasp for paint-brushes .....	July 12, 1870
102,008	Hurd, Artemas Bodman, Watkins, N. Y. Wagon-tree tightener .....	April 19, 1870
108,597	Hurd, Davis, Lockport, N. Y. Rein-holder .....	Oct. 25, 1870
4,060	Hurd, Edwards, Champaign County, Ohio. Ax .....	(Design) May 24, 1870
102,009	Hurd, Reuben, Morrison, Ill. Wagon-brake tightener .....	April 19, 1870
104,738	Same..... Car-brake .....	June 28, 1870
104,316	Hurford, George, assignor to self and William H. Hart, Canton, Ohio. Hinge .....	June 14, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,197	Hurlbut, Daniel N., Chicago, Ill. Window-screen .....	Jan. 25, 1870
107,914	Hurlbut, Sidney S., Cordova, Ill. Wagon-lock .....	Oct. 4, 1870
105,337	Hurlbutt, James I., Norwalk, Ohio. Pump .....	July 12, 1870
	Hursh, Abraham, and Edgar S. Thomson. (See Thomson & Hursh, assignors.)	
102,548	Hurt, Abel L., Monticello, Ind. Clothes-line holder .....	May 3, 1870
108,356	Huse, Warren D., Gileford, N. H. Spinning-machine .....	Oct. 18, 1870
109,412	Huson, Cornelius W., French Corral, Cal. Rope-holder .....	Nov. 22, 1870
	Hussey, Joseph L. (See Babbitt, Samuel, assignor.)	
110,044	Hussey, Roland C., assignor to self and Augustus O. Corbett, Milford, Mass. Steam-jet boiler-tube cleaner .....	Dec. 13, 1870
	Husson, Joseph R., et al. (See McCracken, Edwin D., assignor.) (Two cases.)	
108,145	Husted, Israel G., Brooklyn, N. Y. Composition for printing-rollers .....	Oct. 11, 1870
103,821	Huston, George W., Putnam, Ohio. Box for packing fruit, provisions, &c. ....	Dec. 6, 1870
102,403	Huston, James S., Mechanicsburgh, Pa. Horse-collar pad .....	April 26, 1870
103,337	Same..... Fly-net for horses .....	May 24, 1870
	Huston, James S., and George L. Du Laney. (See Du Laney & Huston.)	
102,404	Huston, William C., assignor to self and Nelson J. Quinn, Eaton, Ohio. Alphabetical index .....	April 26, 1870
	Hutchins, Sabin. (See Leach, Sewall, assignor.)	
109,621	Hutchins, Carleton B., Ann Arbor, Mich. Manufacture of paper .....	Nov. 29, 1870
98,502	Hutchins, H. Wesley, Livermore Falls, Me. Box for coffee, spices, &c. ....	Jan. 4, 1870
109,822	Hutchins, William, assignor to self and George G. Hutchins, Paw Paw, Mich. Feed-cutter .....	Dec. 6, 1870
3,830	Hutchinson, C. B., Auburn, N. Y. Machine for grinding and pressing apples, grapes, &c. .... (Reissue) .....	Feb. 8, 1870
3,925	Hutchinson, Charles B., assignor to James B. Brown, Peekskill, N. Y. Mill. (Division A, reissue) .....	April 19, 1870
3,926	Same..... Mill. (Division B, reissue) .....	April 19, 1870
105,688	Hutchinson, Elias S., Baltimore, Md. Apparatus for removing oil from seed, meal, &c. ....	July 26, 1870
110,239	Hutchinson, Henry E., South Brooklyn, N. Y. Self-bracket and clothes-hook ..	Dec. 20, 1870
	Hutchinson, Jesse L. (See Sim, Thomas, assignor.)	
107,780	Hutchinson, Reuben A., Bergen, N. J. Grate for furnaces .....	Sept. 27, 1870
	Hutchinson, Richard W. (See Gordon, Lewis L., assignor.)	
109,014	Hutchinson, Robert, Newark, N. J. Fire-cracker pistol or holder .....	Nov. 8, 1870
102,270	Hutchinson, Samuel, England. Machinery for striking out leather .....	April 26, 1870
102,622	Hutchinson, Timothy H., Gorham, N. H. Water-elevator .....	Nov. 29, 1870
3,990	Hutchison, James, assignor to Deborah, Albert E., and Nathaniel B. Powers, Newark, N. J. Floor oil-cloth pattern .....	April 26, 1870
3,991	Same..... Floor oil-cloth pattern .....	April 26, 1870
4,404	Hutchison, James, assignor to Thomas Potter, Son & Co., Newark, N. J. Oil-cloth pattern .....	Oct. 11, 1870
100,631	Huton, Charles E., Commerce, Mo. Hollow grate for steam-boilers .....	Mar. 8, 1870
109,906	Same..... Stop-valve .....	Dec. 6, 1870
102,623	Huy, Jacob, Whistler, Ala. Pile-driver .....	Nov. 29, 1870
	Hayler, E. P., et al. (See Hill, Joseph, assignor.)	
107,380	Hyams, Hyam J., Pittsburgh, Pa. Gas-meter .....	Sept. 13, 1870
106,164	Hyatt, Charles, Buffalo, N. Y. Sad and crimping iron .....	Aug. 9, 1870
106,823	Same..... Fluting and sad iron .....	Aug. 30, 1870
108,789	Hyatt, Charles, assignor of two-thirds interest to Joseph N. Mileham and Erhard Schlenker, Buffalo, N. Y. Railway-car axle-lubricator .....	Nov. 1, 1870
105,338	Hyatt, John W., jr., and Isaiah S., Albany, N. Y. Treating and molding pyroxyline .....	July 12, 1870
100,632	Hyatt, Theodore, New York, N. Y. Heat-resisting material for safes, bank-vaults, &c. ....	Mar. 8, 1870
101,268	Same..... Combination asbestos-filling for fire-proof safes and other structures .....	Mar. 29, 1870
108,879	Same..... Lining and covering refrigerators and refrigerator-cars .....	April 12, 1870
99,571	Hyde, Edward A., Ann Arbor, Mich. Apparatus for separating gold and silver from pulverized quartz .....	Feb. 8, 1870
105,459	Hyde, Isaac, Oakland, Cal. Alarm for ticket-nippers for coupon-tickets .....	July 19, 1870
107,262	Hyde, J. Burrows, New York, N. Y. Apparatus for carbureting air and gas. ....	Sept. 13, 1870
107,263	Same..... Blow-pipe .....	Sept. 13, 1870
107,264	Same..... Trap-attachment for gas-fixtures .....	Sept. 13, 1870
110,366	Same..... Utilizing sewerage matters .....	Dec. 20, 1870
109,321	Hyde, James C., assignor to West Haven Buckle Company, West Haven, Conn. Buckle .....	Nov. 15, 1870
102,126	Hyde, James P., New York, N. Y. Hydrant .....	April 19, 1870
104,739	Hyde, Moses and Francis, Baltimore, Md. Apparatus and process for the manufacture of soap .....	June 28, 1870
109,907	Hyde, Oliver, Oakland, Cal. Tire for traction-engines .....	Dec. 6, 1870
99,679	Hyde, Walter, assignor to self and Walton Townsend, New York, N. Y. Elevated railway .....	Feb. 8, 1870
101,017	Hydes, Thomas, and Joseph Bennett, England. Heating and other furnaces. ....	Mar. 22, 1870
98,970	Hyers, Benjamin S., Pekin, Ill. Cultivator .....	Jan. 18, 1870
106,165	Hyndman, William G., Cincinnati, Ohio. Rotary blower .....	Aug. 9, 1870
106,366	Ibos, Eugene, France. Manufacture of boot and shoe soles .....	Aug. 16, 1870
109,624	Icard, Joseph, Donaldsonville, La. Pump .....	Nov. 29, 1870
	Idell, Charles P., et al. (See Freeman, Idell & Vanderhoven.)	
103,049	Ihlenfeldt, Fred., Leroy, Ill. Smut-machine .....	May 17, 1870
105,689	Ihrig, Charles, Jersey City, N. J. Railroad-car journal-box .....	July 26, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,813	Henburg, Hermann, assignor to Mackellar, Smiths & Jordan, Philadelphia, Pa. Printers' type ..... (Design) ..	Jan. 11, 1870
4,061	Same.....Type..... (Design) ..	May 24, 1870
107,688	Hier, William, Shreveport, La. Baling-press .....	Sept. 27, 1870
100,633	Hillingworth, Benjamin, Freeport, Ill. Device for packing and transporting eggs .....	Mar. 8, 1870
108,266	Same.....Washing-machine .....	Oct. 11, 1870
109,322	Same.....Leroy, Minn. Mowing-machine .....	Nov. 15, 1870
109,625	Hsley, Silas A. (See Chase, John K., assignor.)	
	Hmlay, Charles G. and William L., Philadelphia, Pa. Fruit-jar .....	Nov. 29, 1870
	India Dye Company. (See Rowley, John, assignor.)	
	India-Rubber Comb Company. (See Schlesinger, A. D., assignor.)	
	Ingalls, Gustavus W. (See Davis, Horace L., assignor.)	
	Ingalls, Helen M. (See Norton, Marcus P., assignor.)	
	Same.....Same..... (Reissue.)	
101,269	Ingalls, Moses, Muscatine, Iowa. Washing-machine .....	Mar. 29, 1870
109,214	Ingels, James and Thomas J., Atchison, Kans. Well-auger .....	Nov. 15, 1870
99,198	Ingels, Joseph, Milton, Ind. Grain-drill and broadcast-sower .....	Jan. 25, 1870
102,405	Same.....Seeding-machine .....	April 26, 1870
102,940	Same.....Double and single tree fastening for carriages .....	May 10, 1870
102,941	Same.....School desk and seat .....	May 10, 1870
3,976	Same.....Grain-drill..... (Reissue) ..	May 17, 1870
105,690	Same.....Grain-drilling machine .....	July 26, 1870
105,691	Same.....Padlock .....	July 26, 1870
107,915	Same.....Grain-drill .....	Oct. 4, 1870
	Ingersoll, A. M. (See McFarland, David, assignor.)	
	Ingersoll, John M., et al. (See Cranston, Banks & Ingersoll.)	
106,166	Ingersoll, Martin V., Norwalk Bridge, Conn. Billiard-cue .....	Aug. 9, 1870
99,141	Ingersoll, P. C., Greenpoint, N. Y. Chair-bottom .....	Feb. 1, 1870
99,199	Ingersoll, Simon, Brooklyn, N. Y. Friction-clutch .....	Jan. 25, 1870
104,317	Ingersoll, Simon, assignor to Samuel C. Ingersoll, Brooklyn, N. Y. Ratchet-drill .....	June 14, 1870
	Ingersoll, Simon, and Job Johnson. (See Johnson & Ingersoll, assignors.)	
101,270	Ingersoll, S. H., New York, N. Y. Wood-pavement .....	Mar. 29, 1870
100,767	Ingersoll, T. D., Monroe, Mich. Horse hay-fork .....	Mar. 15, 1870
	Ingham, Harvey B., Camptown, Pa. Smut-machine..... (Extension) ..	Oct. 24, 1870
107,265	Inglis, William, and John Frederick Spencer, England. Steam-engine.....	Sept. 13, 1870
3,851	Ingraham, Elias, Bristol, Conn. Clock-case..... (Design) ..	Feb. 15, 1870
109,626	Same.....Embellishment of glass .....	Nov. 29, 1870
4,207	Same.....Clock-case..... (Reissue of design) ..	Dec. 20, 1870
109,413	Ingraham, Hanford, Naples, N. Y. Spring bed-bottom .....	Nov. 22, 1870
100,768	Ingraham, Hiram, Armada, Mich. Horseshoe .....	Mar. 15, 1870
99,572	Ingraham, James, Troy, N. Y. Method of attaching floats and sinkers to fishing-lines .....	Feb. 8, 1870
106,167	Ingraham, William S., Evanston, Ill. Harvester-cutter .....	Aug. 9, 1870
101,018	Ingstrum, William Miller, Hornellsville, N. Y. Car-coupling .....	Mar. 22, 1870
107,615	Inman, Stephen, Rockford, Ill. Device for moving buildings .....	Sept. 20, 1870
	International Marble-Coloring Company. (See Gardner, Smith, assignor.)	
	International Screw-Nail Company. (See Alden, James M., assignor.)	
107,501	Ireland, William A., New York, N. Y. Device for operating hand-fans .....	Sept. 20, 1870
106,487	Ireland, William Carleton, Boston, Mass. Coupling for wire-rigging .....	Aug. 16, 1870
108,598	Irish, George W., Memphis, N. Y. Car-coupling .....	Oct. 25, 1870
	Irvine, F. W., et al. (See Berkstresser, George, assignor.)..... (Design.)	
103,338	Irvine, Charles, et al. (See Kay, William, assignor.)	
99,442	Irwin, James B., Newark, Ohio. Lamp-lighter, burglar and firealarm .....	May 24, 1870
99,443	Irwin, John H., Philadelphia, Pa. Lantern .....	Feb. 1, 1870
104,318	Same.....Lamp-burner .....	Feb. 1, 1870
105,083	Same.....New York, N. Y. Lantern .....	June 14, 1870
105,339	Same.....same .....	July 5, 1870
	Same.....same .....	July 5, 1870
	Irwin, John W., and Andrew J. Haswell. (See Haswell & Irwin.)	
100,039	Irwin, William H. H., Philadelphia, Pa. Compound for cure of coughs, colds, &c. (Antedated Feb. 5, 1870) .....	Feb. 22, 1870
98,772	Isbell, Charles W., New York, N. Y. Rotary pump. (Antedated Jan. 6, 1870) ..	Jan. 11, 1870
105,946	Issett, Franklin B., Hollidaysburg, Pa. Binding-attachment for harvesters ..	Aug. 2, 1870
100,040	Isgrigg, Nathan L., Moore's Hill, Ind. Cultivator .....	Feb. 22, 1870
109,627	Isham, George B., Burlington, Vt. Heating-stove. (Antedated Nov. 17, 1870) ..	Nov. 29, 1870
98,971	Isham, Henry, New Britain, Conn. Knob for permutation-locks .....	Jan. 18, 1870
98,972	Isham, Henry, deceased, by Frances E. Isham, administratrix, Hartford, Conn. Permutation-lock .....	Jan. 18, 1870
101,880	Isham, Sardis W., Hinckley, Ohio. Paint and pigment .....	April 12, 1870
	Isherwood, Thomas, et al. (See Nuttall, James, assignor.)	
99,630	Islet, Henry, and Samuel W. Cummings. (See Cummings & Israel.)	
99,631	Ivens, William H., Trenton, N. J. Double-acting pump .....	Feb. 8, 1870
100,411	Same.....Double-cylinder force-pump .....	Feb. 8, 1870
	Ivens, William H., Trenton, N. J. Steam-generator .....	Mar. 1, 1870
	Same..... (See Brooke, William E., assignor.)	
108,146	Ivers, Alfred, New York, N. Y. Water-closet hopper .....	Oct. 11, 1870
100,898	Iverson, Alfred, jr., Macon, Ga. Seed and grain drill .....	Mar. 15, 1870
	Ives & Allen. (See Young, Thomas, assignor.)	
	Ives, Franklin B., et al. (See Clark, George B., assignor.)	
	Ives, James, Mount Carmel, Conn. Mode of attaching pads to saddle-trees. (Extension) .....	June 8, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,357	Ives, James, Mount Carmel, Conn. Whiffletree-coupling	Oct. 18, 1870
103,748	Ives, Oliver P., Syracuse, N. Y. Car-coupling	May 31, 1870
	Ives, William, and James D. Van Arnum. (See Van Arnum & Ives.)	
106,168	Ives, William A., New Haven, Conn. Bung-borer	Aug. 9, 1870
103,267	Same..... Auger-handle	Oct. 11, 1870
4,156	Same..... Auger (Reissue)	Oct. 18, 1870
	Same..... (See Ford, John C., assignor.)	
110,141	Jack, John, Fiskilwa, Ill. Vehicle	Dec. 13, 1870
104,595	Jackson, Abram, Lebanon, Tenn. Motive-power apparatus	June 21, 1870
100,532	Jackson, Byron and Benjamin F., Woodland, Cal. Grain and straw carrying attachment for separators	Mar. 8, 1870
102,549	Jackson, Charles Augustus, Petersburg, Va. Tobacco-roller	May 3, 1870
103,215	Jackson, Cornelius L., Millersburgh, Ill. Adjustable draught-device for plows	Nov. 15, 1870
103,147	Jackson, Edward S., Bethel, Vt. Machine for manufacturing chair-seats	Oct. 11, 1870
109,908	Jackson, Francis, assignor to William Prosser, England. Lubricator for steam-engines	Dec. 6, 1870
99,905	Jackson, George H., College Corner, Ind. Clod and cornstalk fender. (Ante-dated Feb. 5, 1870)	Feb. 15, 1870
	Jackson, James, and Jeffrey O. Bentley. (See Bentley & Jackson.)	
103,888	Jackson, James L., New York, N. Y. Pattern for castings	June 7, 1870
4,377	Same..... Iron railing for horse-stalls (Design)	Oct. 4, 1870
4,378	Same..... same (Design)	Oct. 4, 1870
4,379	Same..... same (Design)	Oct. 4, 1870
103,620	Jackson, Jehiel, Columbus, Wis. Seat-holder	May 31, 1870
103,235	Jackson, Moses T., Montrose, Pa. Carriage-top	Mar. 1, 1870
	Jackson, R. (See Lidren, Christopher, assignor.)	
107,781	Jackson, Richard A., assignor to self, William Reynolds, Hugh Bleakly, Henry P. McIntosh, Frank M. Orr, and Peter Keplinger, Alliance, Ohio. Converting cast iron and cast-iron articles into steel	Sept. 27, 1870
102,822	Jackson, William, assignor to self and Henry C. Wilkins, Albany, N. Y. Church-organ	May 10, 1870
	Jackson, William, and Charles H. Davie. (See Davie & Jackson.)	
	Jackson, William H., and Edmund Howard. (See Howard & Jackson.)	
104,460	Jackson, William M., Woodland, Cal. Grain-lifter for harvesters	June 21, 1870
110,141	Jacob, James W., assignor to self and John J. O'Donnell, Jeffersonville, Ind. Brake for sewing-machines	Dec. 13, 1870
105,213	Jacobi, Clement R., Greenpoint, N. Y. Kindling-fagot	July 12, 1870
100,041	Jacobs, James, Marysville, Ky. Steam-generator	Feb. 22, 1870
100,412	Jacobs, J. N., Crittenden, Ky. Churn	Mar. 1, 1870
102,825	Jacobs, Lyman, Albion, Mich. Life-preserver	May 10, 1870
105,910	Jacobson, John, Austin, Minn. Harrow	Nov. 1, 1870
101,881	Jacot, Charles E., Switzerland. Stem-winding watches	April 12, 1870
102,942	Jaeger, Gustav L., New York, N. Y. Machine for lining and drying paste-board, &c.	May 10, 1870
105,084	Same..... Adhesive compound for preparing pasteboard	July 5, 1870
109,323	Same..... Muff and collar box	Nov. 15, 1870
109,909	Jaeger, Julius, Tompkinsville, N. Y. Base-burning fire-place heater	Dec. 6, 1870
	Jahne, Smith & Co. (See Pond, Robert James, assignor.)	
108,025	Jakob, Christian, New Orleans, La. Beer-faucet	Oct. 4, 1870
103,193	James, B., Worcester, Mass. Jack-spool	May 17, 1870
110,240	James, David H., Cincinnati, Ohio. Foo'-rest and boot-jack combined	Dec. 20, 1870
107,916	James, Henry B., Trenton, N. J. Main spring barrel of watches	Oct. 4, 1870
100,413	James, John Dawson, jr., assignor to self, Adolf Bode, and Jacob D. C. Outwater, Washington, D. C. Tin-workers' tongs	Mar. 1, 1870
100,414	Same..... Machine for seaming metal roofs	Mar. 1, 1870
108,790	James, William, and William, jr., Canada. Hot-air furnace	Nov. 1, 1870
105,214	Jamieson, Egbert, Chicago, Ill. Station-indicator	July 12, 1870
103,148	Jamieson, Henry, Williamsburgh, N. Y. Rotary engine	Oct. 11, 1870
99,906	Jamison, S. W., New York, N. Y. Crimping-machine	Feb. 15, 1870
104,596	Jamison, Samuel W., Newark, N. J. Boot-crimper	June 21, 1870
	Jamison, Samuel W., et al. (See Bullivant, Josiah, assignor.)	
105,215	James, Henry S., Oshkosh, Wis. Ventilator	July 12, 1870
110,142	Jaques, David L., Hudson, Mich. Harrow	Dec. 13, 1870
107,689	Jaques, George, Boston, Mass. Method of preserving fruit	Sept. 27, 1870
107,690	Same..... Composition of matter for preserving fruit from decay	Sept. 27, 1870
103,889	Jaquith, Gilman, Concord, Mass. Carding-machine	June 7, 1870
99,200	Jarboe, John W., Greenpoint, N. Y. Paper pan, bowl, box, and dish	Jan. 25, 1870
	Jarecki, Hayes & Co. (See Kenyon, Henry K., assignor.)	
	Jarecki, Metz & Co. (See Kenyon, Henry K., assignor.)	
110,469	Jarroll, Edgar T., assignor through mesne assignments to self, Henry S. Gerow, and Henry McLean, Tottenville, N. Y. Refining oils from cotton-waste, &c.	Dec. 27, 1870
101,019	Jasper, Gustavus A., Charlestown, Mass. Apparatus for cooling and saving charcoal	Mar. 22, 1870
	Jaynes, John Q. (See Shay, James, assignor.)	
110,143	Jeavons, Joshua, England. Pile for armor-plates	Dec. 13, 1870
	Jefferies, Edwin A., and Austin S. Moore. (See Moore & Jefferies.)	
99,682	Jeffers, Albert, Lynn, Mass. Machine for molding, rounding, channeling, and stamping soles of boots and shoes	Feb. 8, 1870
98,773	Jeffers, A. Perley M., Allegan, Mich. Spelling-box	Jan. 11, 1870
103,484	Jeffers, Milton C., New York, N. Y. Corn-husking machine	Oct. 18, 1870
108,358	Jefferson, Stillman A., Franklin, Tenn. Self-adjusting rotary cotton-chopper	Oct. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,147	Jeffery, Edwin A., New Haven, Conn. Coal-hod. .... (Reissue).	Oct. 4, 1870
4,228	Jefford, Robert H., assignor to Abraham G. Jennings, New York, N. Y. Net-fabric. .... (Design).	July 19, 1870
4,337	Same. .... Net-fabric. .... (Design).	Sept. 6, 1870
99,444	Jeffries, Cyreneus D., Wooster, Ohio. Harvester-dropper. ....	Feb. 1, 1870
107,782	Jennings, J. Henry, New Bedford, Mass. Thill-coupling. ....	Sept. 27, 1870
109,216	Jenkins, Andrew J., Virginia City, Nev. Medical compound for cure of rheumatism. ....	Nov. 15, 1870
101,737	Jenkins, Charles H., Boston, Mass. Manufacture of glass. ....	April 12, 1870
107,177	Jenkins, Clarence L., Omaha, Nebr. Tanning leather. ....	Sept. 6, 1870
102,550	Jenkins, Jabez, Philadelphia, Pa. Process for tempering steel. ....	May 3, 1870
109,015	Jenkins, James A., Clarksville, Mo. Machine for extracting stumps. ....	Nov. 8, 1870
103,911	Jenkins, Jesse, Sligo, Md. Sulky. ....	Nov. 1, 1870
110,470	Jenkins, Nathaniel, New Orleans, La. Medical compound for the cure of rheumatism. ....	Dec. 27, 1870
99,201	Jenkins, Nicholas, New York, N. Y. Method of wood-working. ....	Jan. 25, 1870
99,202	Same. .... Variety molding-machine. ....	Jan. 25, 1870
105,216	Same. .... Template for paneling-machine. (Antedated June 29, 1870) ....	July 12, 1870
103,026	Same. .... Molding-cutter. ....	Oct. 4, 1870
108,027	Same. .... Paneling-machine. (Antedated Sept. 24, 1870) ....	Oct. 4, 1870
99,203	Jenkins, Thomas H., deceased. (See Hunter, Oliver E., assignor.)	
108,791	Jenks, Barton H., Bridesburg, Pa. Ring-spinning frame. ....	Jan. 25, 1870
102,943	Jenks, George A., and John J. Fawcett, assignors to selves and Joseph Hampson, Chicago, Ill. Street and station indicator. ....	Nov. 1, 1870
102,551	Jenks, Lemuel P., assignor to self and Aaron Kingsbury, Boston, Mass. Bread-machine. ....	May 10, 1870
110,241	Jenks, Samuel B. (See Holcomb, Frederick A., assignor.)	
102,551	Jenness, Joseph M., assignor to self, James D. and Samuel D. Jenness, Boston, Mass. Lantern. ....	May 3, 1870
110,241	Jenney, Walter P., and George W. Taylor, Fair Haven, Mass. Lamp-burner. (Antedated Dec. 15, 1870) ....	Dec. 20, 1870
4,229	Same. .... (See Taylor & Jenney.)	
98,871	Jennings, Abraham G., New York, N. Y. Net-fabric. .... (Design).	July 19, 1870
100,634	Same. .... (See Jefford, Robert H., assignor.) .... (Two cases.)	
99,204	Jennings, Frederick S., assignor to self, Morgan Chittenden, and Henry W. Duryee, Danbury, Conn. Felting-machine. ....	Jan. 18, 1870
103,817	Jennings, George T., et al. (See Bicknell, Joseph G., assignor.)	
104,159	Jennings, John H., New Bedford, Mass. Check for gas-burners. ....	Mar. 8, 1870
110,045	Jennings, Ralph S., assignor to self and Charles F. Jones, New York, N. Y. Perforated cigar-box. ....	Jan. 25, 1870
99,445	Jennings, Silas T., Cincinnati, Ohio. Box-stereoscope. ....	May 31, 1870
98,597	Jennings, Thomas A., and Isaac Desky. (See Desky & Jennings.)	
100,296	Jensen, James L., Brooklyn, N. Y. Lemon-squeezer. ....	June 14, 1870
4,278	Jensen, John C., Chicago, Ill. Tuck-creasing attachment for sewing-machines. ....	Dec. 13, 1870
103,149	Jenson, Olaus, Norway. Rocking-chair. ....	Feb. 1, 1870
104,160	Jepson, John Vivian, Brooklyn, N. Y. Pipe-coupling. ....	Jan. 4, 1870
98,973	Jerald, Bennett, assignor to Charles Parker, Meriden, Conn. Spoon. (Design).	June 7, 1870
105,804	Jerauld, John K., and Henry L. Holmes, Providence, R. I. Collar-box. (Design).	Mar. 8, 1870
104,160	Jerome, Chauncey, assignor through mesne assignments to Richard A. Douglas, New Haven, Conn. Cigar-box. ....	Mar. 1, 1870
105,803	Jerome, Samuel B., assignor to Samuel Peck & Co., New Haven, Conn. Clock-case front. .... (Design).	Aug. 9, 1870
107,366	Same. .... Clock-case front. .... (Design).	Sept. 6, 1870
4,422	Same. .... Mold for drying cigar-fillings. ....	Sept. 13, 1870
109,740	Same. .... Clock-case sash. .... (Design).	Oct. 18, 1870
4,200	Jerome, Walter W., Samuel B. Alger, and Clinton H. Page, Norwich, Conn. Friction-clutch. ....	Nov. 29, 1870
105,085	Jessup, William S., Newark, N. J. Trunk-corner clamp. .... (Design).	July 5, 1870
103,149	Same. .... Trunk-handle cap. ....	July 5, 1870
110,046	Jett, John R. P., Knoxville, Tenn. Plow. ....	Oct. 11, 1870
101,882	Jewell, Freeman C., Rahway, N. J. Cultivator. ....	Dec. 13, 1870
102,127	Jewell, Robert, New York, N. Y. Bedstead and lounge. (Antedated April 4, 1870) ....	April 12, 1870
110,367	Jewett & Root. (See Ritchie, Francis, assignor) .... (Reissue.)	
102,123	Same. .... (See Ritchie, Francis, assignor.)	
104,319	Jewett, David, Lynn, Mass. Axle-box for carriages. ....	April 19, 1870
105,803	Jewett, Frederic A., Grafton, Mass. Thill-coupling. ....	Dec. 20, 1870
104,319	Jewett, George Baker, Salem, Mass. Earth-closet. ....	April 19, 1870
105,803	Same. .... same. ....	June 14, 1870
104,461	Same. .... same. ....	July 26, 1870
100,769	Jewett, John, & Sons. (See Meyer, Jeremiah, assignor.)	
110,368	Jewett, Joseph F., and Alfred Adams. (See Adams & Jewett.)	
107,616	Jewett, Sherman S., and Francis H. Root, Buffalo, N. Y. Cooking-stove. ....	June 21, 1870
98,598	Jewsbury, Joseph, assignor to Henry A. Clarke, England. Hoisting-machine. ....	Mar. 15, 1870
105,804	Jillson, William C., and Amos B. Palmer, Willimantic, Conn. Machine for opening cotton. ....	Dec. 29, 1870
104,160	Jincks, Melvin, Wallace, N. Y. Door-spring. ....	Sept. 20, 1870
98,598	Jobson, Giles T., Macon, Ga. Hoe. ....	Jan. 4, 1870
105,804	Jobson, Philip and Michael C., Lock Haven, Pa. Saw-mill. ....	July 26, 1870
104,160	Jochum, John, Brooklyn, N. Y. Spring-scale. ....	June 14, 1870
98,973	Joeckel, William H., New York, N. Y. Chair. ....	Jan. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,824	Johns, Henry W., New York, N. Y. Acid and water-proof composition for coating cloth, &c.	May 10, 1870
104,852	Johns, William B., Georgetown, D. C., and William J. Read, Cumberland, Md. Harvester	June 28, 1870
108,150	Johnson, Albert W., Middletown, Conn. Embroidering-attachment for sewing-machines	Oct. 11, 1870
109,414	Johnson, Albert W., assignor to the Finkle and Lyon Manufacturing Company, Middletown, Conn. Shuttle for sewing-machines	Nov. 22, 1870
105,806	Johnson, Anson B., Washington, Ind. Fire-place	July 26, 1870
99,683	Johnson, Asa, Brooklyn, N. Y. Method of forming teeth on rollers.	Feb. 8, 1870
105,805	Same..... Machine for bending corrugated metal plates.	July 26, 1870
99,684	Johnson, Asa, assignor to self and William H. Johnson, Brooklyn, N. Y. Machine for corrugating and molding sheet-metal.	Feb. 8, 1870
4,171	Johnson, Asa, assignor of part interest to William H. Johnson, Cairo, N. Y. Machine for rolling cornices..... (Reissue)	Nov. 1, 1870
103,621	Johnson, Benjamin F., Troy, N. Y. Cooking-stove	May 31, 1870
102,944	Johnson, Charles C., Springfield, Vt. Shears and scissors.	May 10, 1870
98,503	Johnson, Edward C., Williamsport, N. Y. Sand-chamber for well-pumps. (Antedated Dec. 24, 1869)	Jan. 4, 1870
99,573	Johnson, Enos B., Chicago, Ill. Feed-water heater for steam-generators.	Feb. 8, 1870
108,151	Johnson, Frederick, and William Hatchman, assignors to Thomas C. Morton Paton, England. Umbrella	Oct. 11, 1870
101,367	Johnson, George, Cincinnati, Ohio. Hoisting-machine	Mar. 29, 1870
110,570	Johnson, George, Philadelphia, Pa. Hat	Dec. 27, 1870
	Johnson, George, administrator, (See Cawood, Joseph D., assignor.) (Extension.)	
	Johnson, George A., and William F. Rippon. (See Rippon & Johnson. (Re-issue.)	
101,883	Johnson, George W., assignor to James P. Hawkins, Danville, Va. Tobacco-bag.	April 12, 1870
	Johnson, Grove H., and Dennis G. Littlefield. (See Littlefield & Johnson.)	
	Johnson, Henry R., and Anthony Gale. (See Gale & Johnson.)	
100,636	Johnson, Insley D., and Abraham V. Hartwell, Chicago, Ill. Furnace for drying sand.	Mar. 8, 1870
109,415	Johnson, Isaac A., assignor to self and Frederick H. Manny, Rockford, Ill. Harvester-rake	Nov. 22, 1870
102,552	Johnson, James H., et al. (See Barlow, Ashbell P., assignor)..... (Reissue.)	
	Johnson, James H., assignor to Holmes, Booth & Hayden, Newark, N. J. Lamp-burner	May 3, 1870
4,371	Johnson, Job, Brooklyn, N. Y. Cradle-plate of gate-latches..... (Design)	Sept. 27, 1870
104,320	Johnson, Job, and Simon Ingersoll, assignors to Job Johnson, Brooklyn, N. Y. Gate-latch	June 14, 1870
3,961	Johnson, John, Hartford, Conn. Construction of sewing-machine covers. (Re-issue)	May 3, 1870
108,792	Johnson, John Garner, England. Time-signaling apparatus for railroads.	Nov. 1, 1870
	Johnson, John H. (See Duffee, John L., assignor)..... (Reissue.)	
106,367	Same..... Dresden, Mo. Railway-car coupling	Aug. 16, 1870
108,485	Same..... Bentonville, Ark. Subsoil-plow	Oct. 18, 1870
104,960	Johnson, Jonathan, Lowell, Mass. Pad for horses' feet	July 5, 1870
105,086	Johnson, Josee, New York, N. Y. Clothes-rack	July 5, 1870
99,685	Johnson, Josee, assignor to self and Joseph W. Oakman, New York, N. Y. Power washing-machine	Feb. 8, 1870
103,339	Johnson, Joseph, Boston, Mass. Washing-machine	May 24, 1870
106,829	Johnson, Joseph, Marshalltown, Iowa. Wire-cutter	Aug. 30, 1870
4,037	Johnson, Joseph B., assignor to Charles Buffum, Lynn, Mass. Shoe..... (Reissue)	June 21, 1870
108,599	Johnson, Joseph H., Griffin, Ga. Hay and cotton press	Oct. 25, 1870
104,161	Johnson, Joseph McGinnis, Chillicothe, Ohio. School-furniture	June 14, 1870
101,467	Johnson, Leonard A., Candor, N. Y. Carriage-clip	April 5, 1870
101,738	Same..... Tug-fastening for whiffletrees	April 12, 1870
106,590	Same..... Furniture-fastening	Aug. 23, 1870
102,553	Johnson, Luther A., New York, N. Y. Caul for laying veneers	May 3, 1870
	Johnson, Marcus M. (See Whiting, William H., assignor.)	
103,468	Johnson, Martin Van B., Holden, Mo. Cooking-vessel	May 24, 1870
103,194	Johnson, Moses, Three Rivers, Mich. Potato-digger	May 17, 1870
103,469	Same..... same	May 24, 1870
105,460	Same..... Cultivator	July 19, 1870
109,518	Johnson, Nathaniel, New York, N. Y. School desk and seat	Nov. 22, 1870
107,055	Johnson, Obadiah, Lassellsville, N. Y. Sleigh-knee. (Antedated Aug. 25, 1870)	Sept. 6, 1870
100,154	Johnson, Olof, and Carl O. Wall, Galva, Ill. Grain-conveyor	Feb. 22, 1870
109,910	Johnson, Per, Columbia, Cal. Sewing-machine	Dec. 6, 1870
107,267	Johnson, Powell, Des Moines, Iowa. Washing-machine	Sept. 13, 1870
102,825	Johnson, Ross, Lawrence, Kans. Subsoil-attachment for plows	May 10, 1870
105,807	Johnson, Russell P., Griffin, Ga. Hopper for mills and grain-drills	July 5, 1870
108,028	Johnson, Thomas J., assignor to H. P. Diehl & Co., Cincinnati, Ohio. Toy-torpedo	Oct. 4, 1870
98,774	Johnson, T. L., and J. Fitzgerald, Rochester, N. Y. Hose-coupling	Jan. 11, 1870
99,090	Johnson, Thomas W., Richmond, Me. Carriage-jack	Jan. 25, 1870
108,793	Johnson, Thomas W., jr., and Anthony W. Goodell, New York, N. Y. Apparatus for evaporating and concentrating bark-extracts, &c.	Nov. 1, 1870
106,169	Johnson, William, Milwaukee, Wis. Hinge	Aug. 9, 1870
109,628	Johnson, William, Lambertville, N. J. Truss-bridge	Nov. 29, 1870
100,533	Johnson, William H., Springfield, Mass. Lamp-shade	Mar. 8, 1870
104,462	Johnson, William J., New Orleans, La. Car-coupling	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,163	Johnson, William J., Newton, Mass., and Henry A. Hildreth, Lowell, Mass. Wire broiler ..... (Design) .....	June 21, 1870
100,770	Johnson, W. O., Alma, Mich. Stump-extractor .....	Mar. 15, 1870
104,486	Johnston, Allen, Ottumwa, Iowa. Ruffling-attachment for sewing-machines....	Oct. 18, 1870
101,468	Johnston, Benjamin, New Iberia, La. Finishing-cultivator .....	April 5, 1870
	Johnston, Edward T., <i>et al.</i> (See Harrah, Gifford & Johnston.)	
93,974	Johnston, Henry M., New York, N. Y. Lambrequin .....	Jan. 18, 1870
99,907	Same.....Pigment for distemper-painting .....	Feb. 15, 1870
105,576	Same.....Protecting and beautifying crystallized metallic surfaces. (Ante- dated July 8, 1870) .....	July 19, 1870
105,692	Same.....Lambrequin. (Antedated July 11, 1870) .....	July 19, 1870
105,693	Same.....same .....	July 19, 1870
109,416	Johnston, Henry M., and Frederick Beck, New York, N. Y. Preparation of mica	Nov. 22, 1870
	Johnston, Hugh K., and Robert Dickey. (See Dickey & Johnston.)	
99,205	Johnston, James J., assignor to self and John Lockie, Allegheny, Pa. Mill for grinding corn, &c. ....	Jan. 25, 1870
101,739	Johnston, John S., Rockford, Ill. Vibrating-coulter for plows. (Antedated April 1, 1870) .....	April 12, 1870
104,321	Johnston, Joseph, and Edmund O. Marlow, Brodhead, Wis. Door-sill .....	June 14, 1870
99,206	Johnston, Joseph B., St. Matthew's, Ky. Churn .....	Jan. 25, 1870
	Johnston, Nathaniel B., <i>et al.</i> (See Langhorne & Johnston.) (Two cases.) (Design.)	
	Johnston, Peter. (See Stamp, John Mitchell, assignor.)	
	Johnston, Thomas, <i>et al.</i> (See McGowan, Robert L., assignor.)	
109,016	Johnston, Thomas, assignor to self and George Adams, Ruby, Mich. Spinning- wheel .....	Nov. 8, 1870
	Johnston, Thomas A., <i>et al.</i> (See Marden, Jeremiah A., assignor.)	
100,635	Johnston, Thomas W., Richmond, Me. Spring bed-bottom .....	Mar. 4, 1870
	Johnston, William, and Daniel Hoffman. (See Hoffman & Johnston.)	
103,340	Johnston, William E., Memphis, Tenn. Manufacture of citric acid .....	May 14, 1870
105,087	Johnston, William T. and Allen, Ottumwa, Iowa. Embroidering-attachment for sewing-machines. ....	July 5, 1870
	Johnston, William T., and Asahel G. Crane. (See Crane & Johnston.)	
107,381	Johnston, George, Philadelphia, Pa. Knitting-machine .....	Sept. 13, 1870
	Joithe, Godfrey, and John Smith. (See Smith & Joithe.)	
110,571	Jones, Alvarado, Randolph, Wis. Sleigh .....	Dec. 27, 1870
98,693	Jones, A. B., Lowell, Wis. Sickle-grinder .....	Jan. 11, 1870
	Jones, Barton H., <i>et al.</i> (See Conrad, Ernst Eustach, assignor.)	
98,975	Jones, Charles, De Soto, Ill. Grain-cleaner .....	Jan. 18, 1870
101,469	Jones, C. C., Portland, Me. Well-point .....	April 5, 1870
	Jones, Charles F. (See Jennings, Ralph S., assignor.)	
104,162	Jones, Daniel B., Wood Station, Ohio. Road-scraper .....	June 14, 1870
106,063	Jones, David I., Newbury, Ohio. Rolling-mill .....	Aug. 2, 1870
100,637	Jones, Edward, South Boston, Mass. Lamp-chimney .....	Mar. 8, 1870
100,899	Jones, Edward P., Shell Mound, Miss. Hasp and staple fastening .....	Mar. 15, 1870
100,900	Same.....Railway-car brake .....	Mar. 15, 1870
100,901	Same.....Wagon-brake .....	Mar. 15, 1870
100,960	Same.....Car brake and starter .....	Mar. 15, 1870
103,600	Same.....Saudflower County. Cotton-bale tie .....	Oct. 23, 1870
	Same.....(See Jordan, William A., assignor.)	
4,459	Jones, Florentine A., Boston, Mass. Watch-plate..... (Design) .....	Nov. 8, 1870
	Jones, Florentine A., and Charles L. Kidder. (See Kidder & Jones, assignors.)	
103,341	Jones, Francis Carter, Ouachita Parish, La. Miter-machine .....	May 24, 1870
106,170	Jones, Frank B., Louisville, Ky. Hinge .....	Aug. 9, 1870
103,749	Jones, George, assignor to Eliza Jones, Peekskill, N. Y. Door-knob.....	May 31, 1870
105,694	Jones, George H., Rose, N. Y. Water-wheel .....	July 26, 1870
102,271	Jones, George H., and Louis D. Boyce, Rochester, N. Y. Car-coupling .....	April 26, 1870
105,461	Jones, George N., Chicago, Ill. High and low water alarm .....	July 19, 1870
101,740	Jones, George R. G., Memphis, Tenn. Fan rocking-chair .....	April 12, 1870
101,020	Jones, George T., Cincinnati, Ohio. Manufacture of revenue and other stamps.	Mar. 22, 1870
99,574	Jones, G. W., Ormsby, Pa. Working of scrap and other iron .....	Feb. 8, 1870
101,884	Jones, Henry, Philadelphia, Pa. Confluent pipe for baths .....	April 12, 1870
98,599	Jones, Henry, assignor to self, James Jones, and Charles Harrison, Philadelphia, Pa. Cock for water-closets .....	Jan. 4, 1870
100,638	Jones, Henry A., Brooklyn, N. Y. Table, token, or check to be used in life- insurance .....	Mar. 8, 1870
100,902	Jones, Horace C., Dowagiac, Mich. Manufacture of stove-baskets .....	Mar. 15, 1870
103,195	Jones, James A., assignor of one-half interest to William S. Teel, Washington, D. C. Combined shirt and collar .....	May 17, 1870
106,697	Jones, James H., Yellow Springs, Ohio. Flour-bolt. (Antedated Aug. 12, 1870) ..	Aug. 23, 1870
107,056	Jones, J. Herva, Rockford, Ill. Seeding-machine .....	Sept. 6, 1870
	Same.....Hand seed-planter .....	Aug. 23, 1870
106,368	Jones, J. Hilton, Binghamton, N. Y. Key-hole guard .....	Aug. 16, 1870
	Jones, James M., and Edmund Trowbridge. (See Trowbridge & Jones.)	
98,976	Jones, James O., assignor to self and Charles Hubbard, jr., Brooklyn, E. D., N. Y. Tuvore .....	Jan. 18, 1870
102,681	Jones, Jenkin B., Laurel Run, Pa. Ventilator for mines .....	May 3, 1870
99,320	Jones, John E., Wiretown, N. J. Elastic lanyard .....	Feb. 1, 1870
107,917	Same.....Surge-reliever .....	Oct. 4, 1870
102,010	Jones, J. Evans, Tidioote, Pa. Expansion-joint for pipes .....	April 19, 1870
103,152	Jones, John H., Memphis, Tenn. Cooking-stove .....	Oct. 11, 1870
110,369	Same.....Knoxville, Tenn. Rolling-mill .....	Dec. 20, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,741	Jones, John S., Covington, Ind. Straw-cutter.....	April 12, 1870
105,695	Jones, L. P., and S. B. Hewitt, jr. (See Usher, Charles, assignor).... (Reissue.)	July 26, 1870
3,953	Jones, Marquis R., Darien, Wis. Boxing for covering the shafting of machinery	April 5, 1870
105,402	Jones, Melville D., Somerville, Mass. Bracket..... (Design)	July 12, 1870
106,591	Jones, Nathaniel, Chicago, Ill. Tuck-marker for sewing-machines.....	Aug. 23, 1870
110,370	Same..... Syracuse, N. Y. Last.....	Dec. 20, 1870
107,918	Same..... New York, N. Y. Truss and supporter.....	
	Jones, Octavous, Troy, N. Y. Machine for turning or planing the inside of bells or other hollow castings.....	Oct. 4, 1870
	Jones, Reuben, and Edwin F. Whitney. (See Whitney & Jones.)	
	Jones, Robert V., and Henry Fessler. (See Fessler & Jones, assignors.)	
105,088	Jones, Solomon, and Bernard Terloth, New Orleans, La. Device for propelling street-cars.....	July 5, 1870
109,629	Jones, Thomas F., Hicksford, Va. Cultivator plow.....	Nov. 29, 1870
102,272	Jones, T. H., & Co. (See Osborn, Benjamin F., assignor.)	
	Jones, Thomas L., assignor to self and Dennis Long, Natchez, Miss. Steam-condenser. (Antedated Oct. 26, 1869).....	April 26, 1870
108,794	Jones, Thomas M., and Charles W. Fillmore. (See Fillmore & Jones.)	
	Same..... Chicago, Ill. Carriage-wheel.....	Nov. 1, 1870
102,554	Jones, Walter S., and William H. Henderson. (See Henderson & Jones.)	
104,740	Jones, William, New York, N. Y. Dry-dock.....	May 3, 1870
106,171	Jones, William, Oshkosh, Wis. Ironing-machine.....	June 23, 1870
	Jones, William, New York, N. Y. Process of removing nails from felt.....	Aug. 9, 1870
	Jones, William F. (See Ward, John D., assignor.)	
103,153	Jones, William F., assignor to self and C. A. Edmonston, Baltimore, Md. Permutation-lock faucet.....	Oct. 11, 1870
107,382	Jones, William H., assignor to self and D. G. Brumback, Newport, Ky. Roofing-compound.....	Sept. 13, 1870
107,057	Jones, William P., Arcade, N. Y. Harrow.....	Sept. 6, 1870
99,775	Jonson, Solon. (See Pettengill, Manasseh, assignor.)	
110,371	Jope, George W., assignor to self and William Bunton, Pittsburgh, Pa. Shovel-blank.....	Feb. 15, 1870
	Jope, George W., and William Bunton, Pittsburgh, Pa. Rolled bar for plow-beam blanks.....	Dec. 20, 1870
101,021	Joralemon, Nicholas H., et al. (See Demorest & Joralemon)..... (Design.)	
99,446	Jordan, Charles, Wrentham, Mass. Machine for cutting basket-stuff.....	Mar. 22, 1870
	Jordan, Dedrick, assignor to A. S. and J. Gill & Co. Charlestown, Mass. Dovetailing-machine.....	Feb. 1, 1870
103,750	Same..... Cutter for dovetailing-machines.....	May 31, 1870
103,890	Same..... Cutter for wood-molding machines.....	June 7, 1870
102,011	Jordan, Dedrick, Charlestown, Mass., and Joseph Dill, Grand Rapids, Mich. Dovetailing-machine.....	April 19, 1870
107,919	Jordan, Elbert, Pickens County, Ala. Corn-sheller.....	Oct. 4, 1870
103,891	Jordan, John W., Lexington, Va. Motive mechanism for sewing-machines.....	June 7, 1870
110,047	Same..... Churn.....	Dec. 13, 1870
3,852	Jordan, Lucius, and Leander E. Smith, assignors to the Collins Company, Collinsville, Conn. Wrench..... (Reissue).....	Feb. 22, 1870
107,058	Jordan, William A., New Orleans, La. Bale-tie.....	Sept. 6, 1870
106,098	Jordan, William A., assignor to Edward P. Jones, New Orleans, La. Bale-tie.....	Aug. 23, 1870
100,903	Jordan, William J., New Lisbon, Ohio. Machine for bending fifth-wheel.....	Mar. 15, 1870
107,059	Jordan, William N., assignor to self, Porter M. Smart, and Henry W. Cook, Cambridge, Mass. Paint-compound.....	Sept. 6, 1870
	Jordan, William W., et al. (See Sinclair, James A., assignor.)	
106,369	Joseph, Edward E., St. Louis, Mo. Egg-carrier.....	Aug. 16, 1870
	Joseph, Edward, and Daniel Williams. (See Williams & Joseph.)	
109,217	Joseph, William, Quincy, Mich. Potato-digger. (Antedated Nov. 5, 1870).....	Nov. 15, 1870
109,218	Joslyn, Benjamin Franklin, New York, N. Y. Breech-loading fire-arm.....	Nov. 15, 1870
109,417	Same..... Revolving fire-arm.....	Nov. 22, 1870
	Josselyn, Benjamin F. and Joel S., et al. (See Samuels, John L., assignor.)	
	Joy, Henry S., et al. (See Burbank, Abner, assignor.)	
	Joy, Robert D.; William D., and Robert F. (See Rigell, Mark, assignor.) (Two cases.)	
99,686	Joyce, Charles R., Alexandria, Va. Cross-head shifter.....	Feb. 8, 1870
109,418	Joyce, Charles R., assignor to self and Edwin Reeside, Alexandria, Va. Railway-rail chair.....	Nov. 22, 1870
102,826	Joyce, George F., Boston, Mass. Drawer for furniture.....	May 10, 1870
102,827	Same..... Sash-supporter.....	May 10, 1870
105,808	Joyce, Jacob O., Dayton, Ohio. Case for turbine water-wheels.....	July 26, 1870
106,488	Joyce, Joseph L., New Haven, Conn. Shoe.....	Aug. 16, 1870
3,992	Judd, Albert D., New Haven, Conn. Bracket..... (Design).....	April 26, 1870
4,000	Same..... Drawer-pull..... (Design).....	April 26, 1870
102,828	Same..... Match safe.....	May 10, 1870
4,016	Same..... Drawer-pull..... (Design).....	May 10, 1870
4,077	Same..... Metallic bracket..... (Design).....	May 31, 1870
104,463	Same..... same.....	June 21, 1870
104,464	Judd, Albert D., and Edward M., New Haven, Conn. Metallic bracket.....	June 21, 1870
109,823	Judd, Edward M., New Haven, Conn. Head-rest for car-seats.....	Dec. 6, 1870
106,830	Judd, Frederick W., and George M. Hubbard, New Haven, Conn. Lock for the meeting-rail of sashes.....	Aug. 30, 1870
104,163	Judd, Hubert L., Brooklyn, N. Y. Nail for pictures, &c.....	June 14, 1870
104,164	Same..... Tassel-hook.....	June 14, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Judd Manufacturing Company. (See Add, John, assignor.)	
104,463	Judd, Morton, New Haven, Conn. Spring-bolt for windows.....	June 21, 1870
3,915	Judd, Morton, assignor to the Judd Manufacturing Company, New Haven, Conn. Sash-fastener..... (Reissue).....	April 12, 1870
98,694	Judd, Morton and Albert D., New Haven, Conn. Window-button.....	Jan. 11, 1870
102,945	Judd, Morton, New Haven, Conn., and Hubert L., Brooklyn, N. Y. Coat and hat hook.....	May 10, 1870
109,741	Judd, Nelson T., Washington, D. C. Rotary plow.....	Nov. 29, 1870
	Judd, Thor. (See Doty, Ellis, assignor.)	
107,060	Judson, Alonzo C., Grand Rapids, Ohio. Garden-hoe.....	Sept. 6, 1870
100,042	Judson, A. C., assignor to E. O. Judson, Grand Rapids, Ohio. Plow.....	Feb. 22, 1870
107,502	Judson, Anson, Brooklyn, N. Y. Planing-machine.....	Sept. 20, 1870
99,908	Judson, Frederick, Castleton, N. Y. Reflector for lamps.....	Feb. 15, 1870
107,323	Judson, William B., Poughkeepsie, N. Y. Spring-mattress.....	Sept. 13, 1870
3,874	June, Joseph W., Wheeling, W. Va. Inkstand..... (Design).....	Mar. 1, 1870
	Jungbluth, Julius, and Otto Kornemann. (See Kornemann & Jungbluth.)	
105,089	Kaempfe, Daniel, and Carl List, Germany. Compounding china clay to imitate marble, mother-of-pearl, &c.....	July 5, 1870
4,404	Kagy, Henry, assignor to Thomas Potter, Son & Co., Philadelphia, Pa. Oil-cloth pattern..... (Design).....	Oct. 11, 1870
4,405	Same..... same..... (Design).....	Oct. 11, 1870
4,406	Same..... same..... (Design).....	Oct. 11, 1870
4,538	Same..... same..... (Design).....	Dec. 27, 1870
4,539	Same..... same..... (Design).....	Dec. 27, 1870
108,359	Kahn, Herman, Troy, N. Y. Gun-charger.....	Oct. 18, 1870
101,271	Kahnweiler, David, New York, N. Y. Hulling-machine.....	Mar. 29, 1870
	Kais, Martin, and John R. Hartmann. (See Hartmann & Kais.)	
110,472	Kaiser, William, Wilkesbarre, Pa. Base-burning stove. (Antedated Dec. 17, 1870).....	Dec. 27, 1870
106,172	Kaiser, William C., Louisville, Ky. Machine for bending clevises, stirrups, &c.....	Aug. 9, 1870
104,597	Kalek, Carl A., Philadelphia, Pa. Clothes-line holder.....	June 21, 1870
108,360	Kalkbrenner, Frederick B., Clinton, Mo. Combination-lock.....	Oct. 18, 1870
103,795	Same..... Bridle-bit.....	Nov. 1, 1870
106,831	Kane, Daniel, Tivoli, Iowa. Fanning-mill.....	Aug. 30, 1870
4,179	Kappelhoff, John H., and Samuel Rauh, New York, N. Y. Fur-collar. (Design).....	June 28, 1870
105,340	Same..... same.....	July 12, 1870
3,254	Same..... Muff..... (Design).....	July 19, 1870
101,625	Karlen, John Jacob, Switzerland. Composition for the manufacture of friction-matches.....	April 5, 1870
	Karney, Charles J., et al. (See Frey, Franklin, assignor.)	
106,439	Karr, Jacob, Washington, D. C. Hemming and felling device for sewing-machines.....	Aug. 16, 1870
110,141	Same..... Needle-setter for sewing-machines.....	Dec. 13, 1870
109,219	Kaspar, John, Pomeroy, Ohio. Clothes-drier.....	Nov. 15, 1870
100,904	Kasson, Amasa C., Milwaukee, Wis. Binding-attachment for sewing-machines.....	Mar. 15, 1870
105,577	Same..... Binding and hemming sewing-machines.....	July 19, 1870
4,407	Same..... Hinge..... (Design).....	Oct. 11, 1870
102,406	Katz, Julius, Cincinnati, Ohio. Plane-stock.....	April 26, 1870
105,462	Katzenstein, Leopold, New York, N. Y. Packing.....	July 19, 1870
103,892	Kauffman, Jacob, Gilboa, Ohio. Sawing-machine.....	June 7, 1870
105,947	Kauffman, Jacob J., Ashland, Ohio. Eaves-trough hanger.....	Aug. 2, 1870
107,061	Kaufman, Joseph, New York, N. Y. Can-opener.....	Sept. 6, 1870
	Kaufmann Brothers. (See Pinover, Simon, assignor.)	
104,855	Kaufmann, Saloman, assignor to Metropolitan Collar Company, New York, N. Y. Paper-collar box.....	June 28, 1870
100,771	Kavanagh, John, Providence, R. I., and Moses S. Moulton, Boston, Mass. Skiving-machine.....	Mar. 15, 1870
109,419	Kay, Allen B., Newark, N. J. Breech-loading fire-arm.....	Nov. 22, 1870
109,420	Kaye, John, jr., Setzler's Store, Pa. Preserving eggs.....	Nov. 22, 1870
106,592	Kaylor, Edward, Pittsburg, Pa. Screw-cutting machine.....	Aug. 23, 1870
104,055	Kays, William, assignor to self, Charles Irving, and James B. Forsyth, Boston, Mass. Horse-collar.....	June 7, 1870
103,050	Keables, Michael Ash, Brattleborough, Vt. Looping-hook for sewing-machines.....	May 17, 1870
98,600	Keagey, Franklin, Chambersburg, Pa. Guide for planing-machines.....	Jan. 4, 1870
101,626	Keagy, A. S., Harriestown, Ill. Field-roller.....	April 5, 1870
103,196	Kealy, Thomas, Lewisville, Texas. Pitman.....	May 17, 1870
107,178	Keane, John, New York, N. Y. Water-closet.....	Sept. 6, 1870
105,217	Keane, John, assignor to self and George H. Brown, New York, N. Y. Water-closet valvular apparatus.....	July 12, 1870
	Kear, George W., and John K. Sax. (See Sax & Kear.)	
107,384	Kearney, Richard, Havre de Grace, N. F. Propelling-apparatus.....	Sept. 13, 1870
105,948	Kearney, William, Belleville, N. J. Grate bar.....	Aug. 2, 1870
108,796	Kearney, William, assignor to self and A. D. Graham, Belleville, N. J. Grate-bar and bearer.....	Nov. 1, 1870
108,797	Kearns, George W., Lilleyville, Pa. Sawing-machine.....	Nov. 1, 1870
110,242	Keating, Ambrose, assignor to Benjamin F. Stephenson, Boston, Mass. Hooded garment.....	Dec. 20, 1870
100,639	Keating, John M., Norfolk, Va. Peanut cleaning and polishing machine.....	Mar. 8, 1870
	Keck, Uriah, and Francis Glick. (See Glick & Keck.)	
104,593	Keefer, William M., assignor to self and James Harding, Chicago, Ill. Lock.....	June 21, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,243	Keeffer, Goveneur M., assignor to self and William U. Barry, Birmingham, Pa. Tool for forming mouths of glass jars.....	Dec. 20, 1870
99,776	Keeler, Frank, assignor to Tomlinson Spring and Axle Company, Bridgeport, Conn. Elliptic spring.....	Feb. 15, 1870
105,578	Keeler, Isaac A., Middleville, Mich. Hand corn-planter.....	July 19, 1870
103,470	Keeling, John T., Hibernia, Mo. Grain-meter.....	May 24, 1870
109,630	Keely, Oliver B., <i>et al.</i> (See Coulston, Thomas J., assignor.)	
108,487	Keen, Jacob M., assignor to self and Charles C. G. Armeling, Philadelphia, Pa. Machine for cutting, scoring, and cornering paper for boxes.....	Nov. 29, 1870
159,742	Keen, Morris L., assignor to self and Samuel A. Walsh, Jersey City, N. J. Manufacture of paper-stock.....	Oct. 18, 1870
108,601	Same..... Paper-stock.....	Nov. 29, 1870
108,798	Keen, Samuel, East Bridgewater, Mass. Knife holder and grinder for heel-cutting machines.....	Oct. 25, 1870
	Keen, William T., <i>et al.</i> (See Monroe, Nathaniel, assignor.)	
	Keenan, Hugh, Worcester, Mass. Drip-catch for umbrellas.....	Nov. 1, 1870
	Keene, John W. (See Vivarttos, Aloha, assignor.)	
	Keeney, Ira, and Uel W. Armstrong. (See Armstrong, U. W., assignor.)	
	Same..... (See Armstrong and Keeney, assignors.)	
100,640	Keep, James M., New York, N. Y. Mucilage-holder.....	Mar. 8, 1870
101,627	Same..... Blotting-pad.....	April 5, 1870
103,751	Same..... Towel or clothes rack.....	May 31, 1870
103,752	Same..... Twine-holder.....	May 31, 1870
109,017	Same..... Coat and hat rack.....	Nov. 8, 1870
100,641	Keep, William J., Troy, N. Y. Stove-pipe damper.....	Mar. 8, 1870
101,368	Same..... Base-burning stove.....	Mar. 29, 1870
102,407	Same..... Stove-pipe damper.....	April 26, 1870
102,682	Same..... Base-burning stove.....	May 3, 1870
	Keeports, A. L., <i>et al.</i> (See Yount, Reister, Keeports & Yount.)	
107,062	Keesey, John, Chester, Pa. Piston-packing.....	Sept. 6, 1870
105,090	Keethler, Daniel, Mount Oreb, Ohio. Corn-planter.....	July 5, 1870
	Keeton, Charles. (See Nutter, George W., assignor.)	
98,977	Kegg, William, Lassellville, N. Y. Spike-extractor.....	Jan. 18, 1870
109,220	Kehoe, Edward J., assignor to William A. Hopkins and Frederick Z. Dickinson, New York, N. Y. Combined lock and latch for sliding-doors.....	Nov. 15, 1870
105,809	Kehrrieder, William H. F., Philadelphia, Pa. Composition for encaustic painting.....	July 26, 1870
104,599	Keith, Arza B., North Bridgewater, Mass., and Timothy K. Reed, East Bridgewater, Mass., assignors to Arza B. Keith. Machine for shaving heels of boots and shoes.....	June 21, 1870
	Keith, Arza B., and Timothy K. Reed. (See Reed & Keith.)	
100,415	Keith, A. P., Easton, Mass. Aerial car.....	Mar. 1, 1870
107,385	Keith, Charles A., Danvers, Mass., Jeremiah Keith, Charlton, Mass., and Thomas K. Keith, Lynn, Mass. Device for folding and ironing shoe-upper edges.....	Sept. 13, 1870
109,519	Keith, David B., East Boston, Mass. Combined stocking-last and yarn and needle holder.....	Nov. 22, 1870
98,775	Keith, Ethan B., Galesburgh, Mich. Car-coupling.....	Jan. 11, 1870
	Keith, Ethan B., and Henry A. Brown. (See Brown & Keith.)	
101,133	Keith, E. H., assignor of one-half interest to Chambers S. Doty, Peoria, Ill. Game-register.....	Mar. 22, 1870
107,063	Keith, Horace M., Commerce, Mich. Plow for cutting potato-roots.....	Sept. 6, 1870
108,488	Same..... Plow.....	Oct. 18, 1870
	Keizer, Lewis R. (See Murrill, James H., assignor.)	
110,244	Kellberg, John W., Philadelphia, Pa. Printing-press.....	Dec. 20, 1870
106,490	Keller, John, Paducah, Ky. Brick-machine.....	Aug. 16, 1870
104,854	Keller, John F., Hagerstown, Md. Machine for distributing fertilizers.....	June 28, 1870
105,810	Keller, John F., assignor to self and William Updegraff, Hagerstown, Md. Drill for seed-planters.....	July 26, 1870
105,811	Same..... Fertilizer-attachment to seeding-machines.....	July 26, 1870
	Keller, John F., <i>et al.</i> (See Sehner, Nathaniel, assignor.)	
108,912	Keller, John F., Boalsburgh, Pa. Harvester-reel.....	Nov. 1, 1870
105,218	Keller, Matthias, assignor to self, Stoughton B., and Luther L. Holden, Boston, Mass. Kaleidoscope.....	July 12, 1870
105,696	Keller, Moses A., Littleton, Pa. Shaft-coupling.....	July 26, 1870
106,370	Same..... Separator-attachment to thrashing-machines.....	Aug. 16, 1870
98,776	Keller, Peter, New York, N. Y. Gas-regulator.....	Jan. 11, 1870
108,029	Same..... same.....	Oct. 4, 1870
98,777	Keller, Victor, Allegheny, Pa. Enameling-oven.....	Jan. 11, 1870
107,503	Kellet, John, Elizabethport, N. J. Mud and ore mill.....	Sept. 20, 1870
4,478	Kellett, Samuel, San Francisco, Cal. Center-piece..... (Design).....	Nov. 15, 1870
4,479	Same..... same..... (Design).....	Nov. 15, 1870
99,909	Kelley, Joseph F., Washington, D. C. Water-meter.....	Feb. 15, 1870
102,013	Kellogg, Anson N., and J. James Schock, Chicago, Ill. Printers' furniture.....	April 19, 1870
110,245	Kellogg, Augustus Burr, Buffalo, N. Y. Blotting-pad.....	Dec. 20, 1870
104,036	Kellogg, Charles, Athens, Pa. Truss-frame bridge.....	June 7, 1870
103,197	Kellogg, Clement A., Elyria, Ohio. Pruning-shears.....	May 17, 1870
	Kellogg, E. H., <i>et al.</i> (See Bigard, Kellogg & Prentiss.)	
3,993	Kellogg, Henry, Chicago, Ill. Trade-mark..... (Design).....	April 26, 1870
101,272	Kellogg, James Franklin, North Bridgewater, Mass. Tuck-creasing attachment for sewing-machines.....	Mar. 29, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,273	Kellogg, James Franklin, North Bridgewater, Mass. Binding-guide for sewing-machines.	April 26, 1870
103,342	Same. Tuck-marker for sewing-machines.	May 24, 1870
101,885	Kellogg, Milo F., Pittsfield, Ohio. Lubricating-axle.	April 12, 1870
99,777	Kells, Oliver, Steubenville, Ohio. Metallic hearth.	Feb. 15, 1870
107,691	Kells, William F., San Francisco, Cal. Sash-holder.	Sept. 27, 1870
108,268	Same. Door-spring.	Oct. 11, 1870
102,829	Kelly, Daniel, Muskegon, Mich. Boring-bit.	May 10, 1870
100,772	Kelly, Daniel, assignor to self and Walter K. Ludwig, Philadelphia, Pa. Centering-attachment for lathes.	Mar. 15, 1870
	Kelly, James. (See Heitmann, August G., assignor.)	
104,600	Kelly, James C., Groveland, N. Y. Water-wheel.	June 21, 1870
106,832	Kelly, John Stafford, New York, N. Y. Pavement.	Aug. 30, 1870
	Kelly, Joseph. (See Paine, Henry J., assignor.)	
	Kelly, Joseph, et al. (See Fischer & Whelan, assignors.)	
105,219	Kelly, Michael D., Cadiz, Ky. Soldering-kit.	July 12, 1870
106,371	Same. Watch-making tool.	Aug. 16, 1870
106,372	Same. Device for winding the main-spring of watches.	Aug. 16, 1870
3,924	Kelly, Patrick, assignor to Benjamin Best, Dayton, Ohio. Gas-generator. (Reissue.)	April 19, 1870
109,018	Kelly, Peter J., assignor to Elizabeth Thompson, New York, N. Y. Composition for coating bearings.	Nov. 8, 1870
106,373	Kelly, Rollin C., Brandon, Wis. Axle-gauge.	Aug. 16, 1870
102,012	Kelly, William, Bath, Me. Closet and bed.	April 19, 1870
105,579	Kelly, William, Saranac, Mich. Animal-poke.	July 19, 1870
100,773	Kelly, William H., New York, N. Y. Apparatus for lighting gas by electricity.	Mar. 15, 1870
	Kelly, William J., and J. Cone. (See Cone & Kelly.)	
	Kelsey, H. O., et al. (See Selden, George, assignor.)	
99,910	Kelsey, James E., Brooklyn, N. Y. Kindling-wood elevator.	Feb. 15, 1870
	Kelsey, J. F., and A. Van Patten. (See Van Patten & Kelsey.)	
103,343	Kelsey, Orlando, Worcester, Mass. Piston-packing.	May 24, 1870
105,341	Kelsey, William, assignor of one-half interest to Henry Augustus Clark, England. Double-gripping flange-drum, pulley, and wheel.	July 12, 1870
58,978	Kemp, Charles E., and Joseph N. Pattison, Philadelphia, Pa. Covering for steps.	Jan. 18, 1870
102,830	Kemper, Simon, Berger, Mo. Mosquito-bar.	May 10, 1870
107,386	Kenan, George W., Upper Sandusky, Ohio. Buggy-spring.	Sept. 13, 1870
101,886	Kendall, Adoniram, Cleveland, Ohio. Cut-off and steam-valve.	April 12, 1870
103,421	Kendall, Fernando C., assignor to self and Gilbert R. Barney, Hartford, Wis. Mop-head.	Nov. 22, 1870
101,887	Kendall, George F., assignor to self and John G. Folsom, Fitchburgh, Mass. Sewing-machine.	April 12, 1870
103,471	Kendall, James N., Nashua, N. H. Transferring and loop-retaining comb for knitting-machines.	May 24, 1870
	Kendall, James O. (See Hicks, Isaac, assignor.)	
104,466	Kendall, John, New Lebanon, N. Y. Thermometer.	June 21, 1870
103,198	Kendall, John L., Foxborough, Mass., and Richard H. Trested, New York, N. Y. Fabric for carpet-lining, &c.	May 17, 1870
	Kendall, Joseph W. (See Wood, George W., assignor.)	
98,778	Kendall, Richard A., Mineral Point, Wis. Seat-cushions.	Jan. 11, 1870
102,274	Kendall, Richard A. and William. Mineral Point, Wis. Hoisting-machine.	April 26, 1870
102,831	Kendrick, Hiland H., Fulton, N. Y. Clothes-drier.	May 10, 1870
109,130	Same. Flower-stand.	Nov. 8, 1870
109,131	Kendrick, Isaac, Philadelphia, Pa. Burning hydrocarbons.	Nov. 8, 1870
106,173	Kenerson, James M., assignor to self and Edmund Burke, Newport, N. H. Lampshade and reflector.	Aug. 9, 1870
	Keniston, C., and J. H. Sawyer. (See Sawyer & Keniston.)	
103,019	Kennedy, Alfred Lafayette, Philadelphia, Pa. Digging-machine for agricultural purposes. (Antedated Oct. 22, 1870.)	Nov. 8, 1870
101,471	Kennedy, Charles W., Williamsburgh, N. Y. Staple-machine.	April 5, 1870
110,473	Kennedy, Edward S., Birmingham, Pa. Spice-box.	Dec. 27, 1870
103,051	Kennedy, George R., Worcester, Mass. Machine for stretching silk, &c.	May 17, 1870
106,174	Kennedy, Michael, New York, N. Y. Platform-scale.	Aug. 9, 1870
102,014	Kennedy, Samuel, Rochester, Pa. Bootjack and brush.	April 19, 1870
99,321	Kennedy, Samuel A., assignor to the Kennedy Electric Clock Company, Attleborough, Pa. Electric clock.	Feb. 1, 1870
102,832	Kennedy, Simon H., assignor to self and F. G. Macomber, New York, N. Y. Apparatus for obtaining tanning-extracts.	May 10, 1870
109,221	Kennett, John R., Geddes, N. Y. Scaffold-bracket for roofing.	Nov. 15, 1870
109,324	Kenney, Jeremiah, sr., Baltimore, Md. Fire-kindler.	Nov. 15, 1870
107,580	Kenney, Lester B., Charlotte, Mich. Horse-collar.	July 19, 1870
110,145	Kenning, James W., Quincy, Mich. Clothes-drier.	Dec. 13, 1870
98,504	Kenny, George, Nashua, N. H. Gauge and divider.	Jan. 4, 1870
107,920	Kenny, John W., and John H. Adams, Albany, N. Y. Hair-curler.	Oct. 4, 1870
103,893	Kent, Artemus A., Lyons, Iowa. Pressure-gauge and safety-valve.	June 7, 1870
107,179	Same. Machine for shearing metal.	Sept. 6, 1870
108,361	Kent, Edward H., New York, N. Y. Guard-bolt for latches.	Oct. 18, 1870
102,275	Kent, Joseph C., and Henry C. Rich, Phillipsburgh, N. J. Pneumatic hoist.	April 26, 1870
105,812	Kent, Prentiss J., and Nathan W. Bancroft, assignors to selves, J. Rich Kent, and John G. Avery, Worcester, Mass. Self-acting mule for spinning.	July 26, 1870
	Kent, William, and Theodore C. Van Wyck. (See Van Wyck & Kent.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,855	Kenyon, Henry K., assignor to self and Jarecki, Metz & Co., Steubenville, Ohio. Deep-well pump.	June 28, 1870
109,631	Kenyon, Henry K., assignor to self and Jarecki, Hayes & Co., Steubenville, Ohio. Pump.	Nov. 29, 1870
108,913	Kenyon, John S., and Lewis Fox, Baldwinsville, N. Y. Manufacture of paper.	Nov. 1, 1870
108,914	Same. Mineral paint.	Nov. 1, 1870
106,175	Kenyon, Silas R., assignor to self and William D. Vernam, Greenville, R. I. Attaching rubber to wringer-shafts.	Aug. 9, 1870
4,220	Kenyon, William G., Wakefield, R. I. Frame for mowing-machines. (Design).	July 12, 1870
105,220	Keplinger, Jacob, Farmersville, Ohio. Automatic sluice-gate.	July 12, 1870
	Keplinger, Peter, <i>et al.</i> (See Jackson, Richard A., assignor.)	
108,030	Kepler, Solomon, Pottstown, Pa. Composition for destroying worms in fruit-trees.	Oct. 4, 1870
108,031	Same. Gate.	Oct. 4, 1870
99,322	Kerigan, Michael James, Boston, Mass. Blowing-apparatus for organs, &c. (Antedated Oct. 21, 1869).	Feb. 1, 1870
101,742	Same. Tremolo-attachment for reed or pipe organs.	April 12, 1870
103,472	Kerigan, Michael J., assignor to self, William P. Emerson, and Edwin Faxon, Boston, Mass. Sewing-machine table.	May 24, 1870
107,180	Kern, William High, and Thomas M. Davis, Philadelphia, Pa. Refrigerator and side-board.	Sept. 6, 1870
4,507	Kerr, Hugh S., assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design).	Dec. 13, 1870
4,540	Kerr, Hugh S., assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design).	Dec. 27, 1870
99,911	Kerr, James, Corsicana, Texas. Fence.	Feb. 15, 1870
3,819	Kerr, Robert, and John P. Scotland. Trade-mark. (Design).	Jan. 18, 1870
4,035	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design).	May 17, 1870
4,180	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design).	June 23, 1870
4,181	Kerr, William, assignor to Israel Foster, Philadelphia, Pa. Carpet-pattern. (Design).	June 28, 1870
4,315	Kerr, William, assignor to James Bromley & Brothers, Philadelphia, Pa. Carpet-pattern. (Design).	Aug. 30, 1870
103,894	Kerr, William Anderson, Easton, Pa. Printing-press.	June 7, 1870
	Kershaw, John, and August Wernet. (See Wernet & Kershaw.)	
	Kersting, Benjamin, and Charles G. Miller. (See Miller & Kersting, assignors.)	
	Kessberger, August. (See Robinson, John G., assignor.)	
102,833	Kessler, Herman H., Detroit, Mich. Manufacture of medicated malt liquors.	May 10, 1870
102,129	Ketcham, Henry W., New York, N. Y. Stopper for jars and bottles.	April 19, 1870
99,912	Ketcham, Lewis Y., and James Taynton, Port Jervis, N. Y. Yard and tank-crane.	Feb. 15, 1870
101,273	Ketchum, Nathaniel S., Marshalltown, Iowa. Harvester-dropper.	Mar. 29, 1870
102,130	Kewin, Charles, San Francisco, Cal. Machine for rolling conical and other tubes.	April 19, 1870
99,913	Keyes, Horatio, Terre Haute, Ind. Machine for smoothing spokes.	Feb. 15, 1870
99,091	Keyser, John H., New York, N. Y. Base-burning stove.	Jan. 25, 1870
99,092	Same. Coal-stove.	Jan. 25, 1870
103,154	Kibler, Nathan, Milton, Ill. Feeding-device for fanning-mills.	Oct. 11, 1870
106,699	Kidd, Joshua, New York, N. Y. Manufacture of gas for illumination, &c. (Patented in England Jan. 5, 1864).	Aug. 23, 1870
4,168	Same. Manufacture of gas from hydrocarbon. (Reissue).	Oct. 25, 1870
110,246	Kidd, Thomas W. S., Springfield, Ill. Harvester-dropper.	Dec. 20, 1870
104,856	Kidder, Charles L., and Florentine A. Jones; said Kidder assignor to said Jones, Boston, Mass. Stem-winding and hand-setting watch.	June 28, 1870
104,741	Kidder, James, assignor to self and James F. Shumate, Urbana, Ohio. Tanning. (Design).	June 28, 1870
105,697	Kidder, Jerome, New York, N. Y. Compound switch for electric batteries.	July 26, 1870
103,602	Same. Galvanic battery.	Oct. 25, 1870
107,268	Kidder, Moses W., Lowell, Mass. Carbureting-apparatus.	Sept. 13, 1870
106,064	Kidder, William B., Pike Township, Ind. Clod-fender for plows.	Aug. 2, 1870
107,221	Kidney, Peter, Olmsted Falls, Ohio. Farm-fence.	July 12, 1870
107,692	Kidwell, George W., Elwood, Ind. Attaching draught to plows.	Sept. 27, 1870
	Kidwell, John L., <i>et al.</i> (See Forney, P. J., assignor.) (Reissue.)	
106,591	Kieffer, Christian, and Joseph R. D. Seeds, Wilmington, Del. Earth-closet.	Aug. 23, 1870
108,362	Kienast, Friederich, Ansonia, Conn. Striking movement of clocks.	Oct. 18, 1870
	Kienzie, Jacob, <i>et al.</i> (See Hintz, John C., assignor.)	
	Same. (See Haile, Robert, assignor.)	
	Same. (See Diebold & Obernesser, assignors.)	
	Kier, Samuel M., (See Stewart, David, assignor.) (Two cases.)	
	Same. (See Ellis, Josiah W., assignor.) (Two cases.)	
103,052	Kilbourn, Edward E., New Brunswick, N. J. Machine for spinning wool.	May 17, 1870
107,693	Kilbourn, Weston W., Sanford, N. Y. Chewing gum.	Sept. 27, 1870
4,151	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus. (Design).	June 14, 1870
4,201	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus. (Design).	July 5, 1870
106,065	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Mode of attaching looking-glass frames to bureaus.	Aug. 2, 1870
4,316	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus. (Design).	Aug. 30, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,941	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.	Aug. 30, 1870
4,350	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)	Sept. 13, 1870
4,351	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)	Sept. 13, 1870
4,352	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)	Sept. 13, 1870
4,357	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)	Sept. 20, 1870
4,423	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for bureaus.....(Design)	Oct. 18, 1870
4,460	Kilburn, Cheney, assignor to Kilburn & Gates, Philadelphia, Pa. Box for the top of bureaus.....(Design)	Nov. 8, 1870
	Kilburn, Chesney, <i>et al.</i> (See Davis, Thomas Hale, assignor.)	
107,181	Kilgore, John C., Philadelphia, Pa. Steam-generator	Sept. 6, 1870
101,628	Kilian, Frederick, New York, N. Y. Folding-chair	April 5, 1870
98,779	Killam, Henry, New Haven, Conn. Whiffle-tree coupling	Jan. 11, 1870
4,070	Same.....Machine for compressing carriage-wheels.....(Reissue)	July 12, 1870
107,783	Same.....Carriage-axle	Sept. 27, 1870
4,435	Same.....Carriage-bed.....(Design)	Oct. 25, 1870
102,408	Killefer, John, West Richfield, Ohio. Carriage-axle lubricator	April 26, 1870
103,895	Kilner, George, and Francis H. Simmons, Sullivan, Ill. Motive mechanism for carriages	June 7, 1870
102,946	Kilsheimer, Ferdinand, Cincinnati, Ohio. Shoe	May 10, 1870
99,207	Kimball, C. P., Portland, Me. Sleigh	Jan. 25, 1870
102,555	Kimball, Elias W., Hudson, N. Y. Soldering fire-pot	May 3, 1870
108,363	Kimball, George, Cleveland, Ohio. Alarm-lock for money-drawers	Oct. 18, 1870
105,949	Kimball, George R., Middleton, N. Y. Buck-saw frame	Aug. 2, 1870
98,979	Kimball, John J., Naperville, Ill. Flood-gate	Jan. 18, 1870
98,601	Kimball, John T., and Benjamin F. Hebard, Boston, Mass. Extension window-screen	Jan. 4, 1870
	Kimball, Matthew H., and James Garvey. (See Garvey & Kimball.)	
101,472	Kimball, William B., Peterborough, N. H. Folding convertible-chair	April 5, 1870
109,422	Kimberly, Lewis A., assignor of one-half interest to George E. Kimberly, New Haven, Conn. Coal-hole cover	Nov. 22, 1870
109,911	Kimble, John H., Samuel, and George W., Fox Lake, Wis. Wind-wheel	Dec. 6, 1870
100,043	Kimm, Martinus B., assignor to self and George C. Steketee, Grand Rapids, Mich. Compound to remove grease from cloth, silk, paper, &c.	Feb. 22, 1870
100,044	Kindel, James, Wilmington, Ohio. Latch for gates	Feb. 22, 1870
3,821	Kindermann, A., Cleveland, Ohio. Wrench.....(Design)	Jan. 25, 1870
	Kindleberger, Tobias J., Eaton, Ohio. Cider-mill.....(Disclaimer)	Oct. 17, 1870
	Same.....same.....(Extension)	Oct. 20, 1870
104,322	King, Charles A., Springfield, Mass. Oilier for loose pulleys	June 14, 1870
3,928	King, Charles A., assignor to self and Daniel B. Wesson, Springfield, Mass. Oilier for loose pulleys.....(Reissue)	April 19, 1870
108,155	King, George, Frederick, Md. Sash-holder	Oct. 11, 1870
101,743	King, George S., Washington, D. C. Splint for fractured limbs	April 12, 1870
107,182	King, George W., Georgetown, D. C. Balance	Sept. 6, 1870
105,221	King, George W., assignor of one-third interest to A. P. Grant, Oswego, N. Y. Folding-seat	July 12, 1870
	King, Harvey, <i>et al.</i> (See Calef, Joseph W., assignor.)	
	King, Henry James Hogg, and Philip Charles Evans. (See Evans & King.)	
109,222	King, John C., Spring Place, Ga. Cotton-seed planter	Nov. 15, 1870
107,504	King, John C., assignor to self, George M. Woodward, and George A. Blood, New York, N. Y. Valve-gear for steam-pumps, engines, &c.	Sept. 20, 1870
107,505	Same.....Balance rock-valve	Sept. 20, 1870
106,176	King, John W., New York, N. Y. Shutter-fastener	Aug. 9, 1870
101,274	King, Joseph, and Charles S. Gould, Jamesville, Wis. Neck-yoke	Mar. 29, 1870
109,365	King, Josiah R., assignor to William M. Tileston, Washington, D. C. Cart-ridge-box	Nov. 15, 1870
104,037	King, Norman, assignor to Daniel Homire, Etna, Pa. Globe-valve	June 7, 1870
102,015	King, Richard J. M., Ypsilanti, Mich. Sweep horse-power	April 19, 1870
	King, Rufus J., and James Greer. (See Greer & King.)	
108,269	King, Samuel M., Lancaster, Pa. Machine for cleaning and ditching rice-fields	Oct. 11, 1870
109,918	King, Samuel U., Windsor, Vt. Lathe	Dec. 6, 1870
110,474	Same.....Seythe-fastening	Dec. 27, 1870
106,594	King, Seth L., and William Ogden, Oswego, N. Y. Grain-drill	Aug. 23, 1870
109,020	King, Sidney D., assignor to self and James M. Welch, Middletown, N. Y. Dumping-car	Nov. 8, 1870
107,784	King, Theodore E., Cleveland, Ohio, and George C. Dolph, West Andover, Ohio. Harvester-cutter holder for grinders	Sept. 27, 1870
101,022	King, W. Haskell, Newark, N. J. Toilet-mirror	Mar. 22, 1870
109,423	King, William H., Newark, N. J. Lathe-chuck	Nov. 22, 1870
99,323	King, William R., Washington, D. C. Machine for moving boats on canals	Feb. 1, 1870
102,556	Same.....Submarine torpedo.....(Reissue)	May 3, 1870
	King, W. W., <i>et al.</i> (See Barlow, Ashbell P., assignor.)	
	Kingan, Samuel. (See Anderson, James.)	
	Kingan, Samuel, administrator. (See Anderson, James.)	
103,053	Kinger, Jacob, Pittsburgh, Pa. Reversible latch	May 17, 1870
103,054	Same.....same	May 17, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,055	Kinger, Jacob, Pittsburgh, Pa. Sancepan-handle.....	May 17, 1870
103,056	Same..... Stamp for fruit-cans.....	May 17, 1870
	Kingman, A. L., <i>et al.</i> (See Burrige, William H., assignor.)	
	Kingsbury, Aaron. (See Jenks, Samuel P., assignor.)	
	Kingsbury, Gilbert J. (See Fuller, William H., assignor.)	
3,897	Kingsbury, Gilbert J., assignor through mesne assignments to Henry G. Giles, Troy, N. Y. Coal-stove..... (Reissue)	Mar. 29, 1870
	Kingsland, Joseph, jr., Franklin, N. J. Paper-pulp engine..... (Extension)	Dec. 15, 1870
	Same..... Machinery for grinding paper-pulp..... (Extension)	Dec. 15, 1870
	Same..... Process of grinding paper-pulp..... (Extension)	Dec. 15, 1870
	Kingsland, W. W., <i>et al.</i> (See Ballantine, Alexander T., assignor.)	
	Kingsworth, William. (See Hall, Joseph D., assignor.)	
103,622	Kinkad, Isaac B., Watertown, Ohio. Drier.....	May 31, 1870
	Kinnear, William E. (See Grose, John T., assignor.)	
	Same..... same..... (Reissue.)	
101,275	Kinner, Royal G., Penn Yan, N. Y. Wrapper for seeds, &c.....	Mar. 29, 1870
107,506	Kinney, Henry R., Portsmouth, Ohio. Harrow-teeth.....	Sept. 20, 1870
98,695	Kinney, Simon, Bignellville, N. Y. Saw-swage.....	Jan. 11, 1870
	Kinsey, Joseph, <i>et al.</i> (See Tranter, Kinsey & Carr.)	
103,623	Kinsey, Moses, Newark, N. J. Skate-fastening.....	May 31, 1870
104,857	Kintz, Joseph, West Meriden, Conn. Lantern-guard.....	June 28, 1870
102,016	Kintz, Joseph, assignor to self and P. J. Clark, West Meriden, Conn. Bell.....	April 19, 1870
107,507	Same..... Caster.....	Sept. 20, 1870
101,023	Kinyon, Warren, and John Maxson, Scott, N. Y. Grater.....	Mar. 22, 1870
4,036	Kinzer, Jacob, Pittsburgh, Pa. Tobacco-knife..... (Design)	May 17, 1870
102,276	Kinzler, Charles, New York, N. Y. Propeller.....	April 26, 1870
108,603	Kipp, Jacob H., Millerstown, Pa. Medical compound for fowls.....	Oct. 25, 1870
103,057	Kipper, Nicholas, Seymour, Ind. Vegetable-cutter.....	May 17, 1870
	Kips, Francis, and William Morstatt. (See Morstatt & Kips.)	
102,017	Kiracofe, James M., Mount Solon, Va. Corn-planter.....	April 19, 1870
108,156	Kirby, Frank E., New York, N. Y. Steam-engine.....	Oct. 11, 1870
103,896	Kirby, Stephen R., East Saginaw, Mich. Adjustable curve for use of draughts-men.....	June 7, 1870
102,131	Kirby, William A., Auburn, N. Y. Harvester.....	April 19, 1870
110,048	Kircher, Julius, Wurttemberg. Printing-ink.....	Dec. 13, 1870
109,824	Kirchner, William M., Pittsburgh, Pa. Jelly-glass.....	Dec. 6, 1870
109,825	Same..... Tool for forming screw-threads on glass jars.....	Dec. 6, 1870
3,954	Kirchner, William M., assignor to Bakewell, Pears & Co., Pittsburgh, Pa. Ornamentation of glassware..... (Design)	April 5, 1870
4,261	Kirchner, William M., assignor to the National Glass Company, Pittsburgh, Pa. Glassware..... (Design)	July 23, 1870
102,683	Kirk, Edward, Sharon, Pa. Cooking-stove.....	May 3, 1870
102,834	Same..... Fence.....	May 10, 1870
	Kirk, Herman. (See Troup, Abraham, assignor.)	
101,276	Kirk, James, Samuel Sheldermine, and Cephas Froggatt, Great Britain. Machine for felting hat-bodies.....	Mar. 29, 1870
3,944	Kirk, James S., Chicago, Ill. Trade-mark..... (Design)	Mar. 29, 1870
	Kirk, Samuel E. (See Gibson, Charles T., assignor.)	
109,021	Kirk, Solomon W., assignor to self and Henry Thomas, Philadelphia, Pa. Flux for working metals and minerals.....	Nov. 8, 1870
109,743	Kirk, Solomon W., assignor to self and William Bailey, Philadelphia, Pa. Separating lead from the precious metals.....	Nov. 22, 1870
	Kirk, Susan, and Edwin J. Howlett. (See Howlett & Kirk)..... (Reissue.)	
107,931	Kirkham, George Byron, New York, N. Y. Treadle for sewing and other machinery.....	Oct. 4, 1870
	Kirkland, Henry B., <i>et al.</i> (See McCracken, Edwin D., assignor).... (Two cases.)	
99,324	Kirkland, William P., San Francisco, Cal. Composition for the manufacture of water, gas, and drain pipes.....	Feb. 1, 1870
110,372	Kirkpatrick, J. M., Utica, Ohio. Machine for making post-holes. (Antedated Dec. 15, 1870).....	Dec. 20, 1870
106,942	Kirkpatrick, Thomas, New York, N. Y. Fastening for policemen's badges.....	Aug. 30, 1870
	Kirkwood, Nathan, and William Merrington. (See Merrington & Kirkwood.)	
109,520	Kirsch, Michel, Chicago, Ill. Bridge-gate.....	Nov. 22, 1870
104,601	Kirtland, George, Westbrook, Conn. Hank for sails.....	June 21, 1870
	Kissam, Daniel W., and George L. Smith. (See Smith & Kissam)..... (Design.)	
107,508	Kissell, Martin L. and Jacob B., Springfield, Ohio. Corn-planter.....	Sept. 20, 1870
105,091	Kistler, Willoughby F., assignor to Hall's Safe and Lock Company, Chicago, Ill. Permutation-lock.....	July 5, 1870
	Kitching, Frederick McH. (See Green, William H., assignor.)	
110,475	Kite, William H., and George S. Newman, Liberty Mills, Va. Smut-machine.....	Dec. 27, 1870
104,038	Kitson, George L., Joshua F. Laning, and Joseph Bennor, assignors of half-interest to Cornelius Walborn, Philadelphia, Pa. Seal-lock.....	June 7, 1870
107,922	Kitson, Richard, Lowell, Mass. Cotton-opener.....	Oct. 4, 1870
110,247	Kitson, William, Lowell, Mass. Mode of balancing cylinders, pulleys, &c.....	Dec. 20, 1870
98,505	Kittle, S. P., Brooklyn, N. Y. Spiral spring for mattresses and furniture.....	Jan. 4, 1870
110,572	Kittleman, William W., Bloomfield, Iowa. Trace-buckle.....	Dec. 27, 1870
102,132	Kittredge, Joseph G., San Francisco, Cal. Knob for safe-doors.....	April 19, 1870
	Kittredge, William E., and Jean C. Fischer. (See Fischer & Kittredge.)	
104,467	Klahre, Moritz T., Bloody Run, Pa. Saw-set.....	June 21, 1870
110,373	Klaucke, Alexander A. C., assignor to Charles F. Smith and Henry C. Comegys, Washington, D. C. Apparatus for pitching barrels.....	Dec. 20, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,705	Kleckner, Joseph, Mottville, Mich. Construction of chimneys and flues.....	Mar. 8, 1870
100,706	Same.....Cement to be used in sewers, drains, and in constructing flues and other parts of buildings.....	Mar. 8, 1870
103,473	Klee, Leopold, and Andrew Patterson, Pittsburgh, Pa. Refrigerating-vessel... (Reissue).....	May 24, 1870
3,900	Kleemann, Carl A., Prussia. Lamp.....	Mar. 29, 1870
101,888	Kleemann, Rudolph, Chicago, Ill. Lamp for billiard-tables.....	April 12, 1870
105,463	Klees, Karl M., New York, N. Y. Machine for making printers' leads.....	July 19, 1870
105,464	Klein, Jakob, assignor to Dreyfoos, Klein & Co., Hesse-Darmstadt. Apparatus for the manufacture of albumenized paper.....	July 19, 1870
109,826	Klinderman, Frederick, <i>et al.</i> (See Stewart, Klinderman & Lamb, assignors.) Kline, Calvin, assignor to self and George E. Hart, Brooklyn, N. Y. Hair-spring of watches, &c.....	Dec. 6, 1870
99,325	Kline, David R., Allentown, Pa. Sash-holder.....	Feb. 1, 1870
101,134	Kline, Jacob, assignor to self and George Winters, Mechanicsburgh, Pa. Harvester crank and pin.....	Mar. 22, 1870
102,835	Same.....Harvester.....	May 10, 1870
104,039	Kline, Michael H., <i>et al.</i> (See Thompson, William, assignor.) Kline, Urias B., Reamstown, Pa. Jointed spring-guard.....	June 7, 1870
100,416	Kline, W. H., Eaton, Ohio. School desk and seat.....	Mar. 1, 1870
108,364	Kline, William H., Jersey Shore, Pa. Mop and scrubber head.....	Oct. 18, 1870
100,774	Kling, Isaac, Seymour, Ind. Vapor-burner.....	Mar. 15, 1870
100,775	Same.....Machine for making fruit-cans.....	Mar. 15, 1870
101,024	Same.....Fruit-can.....	Mar. 22, 1870
108,032	Kling, Peter, Springfield, Ill. Plow and planter.....	Oct. 4, 1870
105,950	Klingman, Herman, <i>et al.</i> (See Phillips, David, assignor.) Kloman, Andrew, Pittsburgh, Pa. Machine for rolling metal.....	Aug. 2, 1870
105,951	Same.....Mechanical motion.....	Aug. 2, 1870
105,952	Kloman, Anthony C., Pittsburgh, Pa. Iron-rolling mill.....	Aug. 2, 1870
109,022	Klotz, Philip, assignor to Bentley C. Bibb, Baltimore, Md. Fire-place stove.....	Nov. 8, 1870
99,687	Klotz, Philip, and Bentley C. Bibb. (See Bibb & Klotz, assignors.) Kluck, Martin M., assignor to self and Herman Glafcke, Hartford, Conn. Machine for spreading tobacco leaves.....	Feb. 8, 1870
101,744	Knacker, Adam, Meadville, Pa. Sink-apparatus for draining cellars.....	April 12, 1870
109,744	Knaffl, Rudolph, Nashville, and Theodore M. Schleier, Knoxville, Tenn. Fan-attachment for rocking-chairs.....	Nov. 29, 1870
102,409	Knapp, A. Hayden, Newton Centre, and George W. Bailey, Boston, Mass.; said Bailey assignor to said Knapp. Curtain-fixture.....	July 26, 1870
4,302	Knapp, Charles B., Waterloo, Wis. Joining wood..... (Design).....	Aug. 23, 1870
98,980	Knapp, George S., Winona, Minn. Chimney-cleaner.....	Jan. 18, 1870
98,981	Same.....Railroad-car window.....	Jan. 18, 1870
101,135	Knapp, Henry, Walworth, N. Y. Tree-protector.....	Mar. 22, 1870
105,342	Knapp, John, Prattsburg, N. Y. Preserving eggs.....	July 12, 1870
99,208	Knapp, Joseph G., Madison, and Samuel D. Libby, Blooming Grove, Wis. Cultivator.....	Jan. 25, 1870
100,417	Knapp, Lucien, Woodhaven, N. Y. Curry-comb.....	Mar. 1, 1870
105,953	Knapp, Myron H., Bay City, Mich. Fluting and sad iron.....	Aug. 2, 1870
105,698	Kneass, Alfred, Northumberland, Pa. Water-wheel.....	July 26, 1870
102,277	Kneass, Strickland, assignor to John Haldeman, Philadelphia, Pa. Wooden pavement.....	April 26, 1870
108,265	Knecht, Adam, assignor to Michael Knecht, Ichester, Md. Pump.....	Oct. 18, 1870
103,624	Knecht, Charles L., Lower St. Clair Township, Pa. Cork-saving bottle-fastening.....	May 31, 1870
110,049	Knecht, Charles L., St. Clair, and Thomas Adams, Stow Township, Pa. Glass-ware and metal-stem connection.....	Dec. 13, 1870
103,474	Knecht, Victor, Cincinnati, Ohio. Pulley-sheave.....	May 24, 1870
100,905	Knell, George, Moorestown, N. J. Revolving rocking and reclining chair. (Antedated March 4, 1870).....	Mar. 15, 1870
109,132	Kniffin, Oscar P., assignor to self and H. A. Lyne, Clinton, Conn. Excavating-scoop.....	Nov. 8, 1870
103,344	Knight, Albert. (See Talbot, George W., assignor.) (Reissue.) Knight, Alfred J., New York, N. Y. Guard for carpet-sweepers.....	May 24, 1870
105,223	Same.....Brooklyn, N. Y. Driving gear-wheel for carpet-sweepers.....	July 12, 1870
99,575	Knight, Daniel F. (See Stevens, Cyrus S., assignor.) Knight, George W., Camden, N. J. Potato-digger.....	Feb. 8, 1870
108,270	Knight, George W., assignor to George Draper & Son, Hopedale, Mass. Holder for spinning-rings.....	Oct. 11, 1870
105,954	Knight, Henry, Brooklyn, N. Y. Water-pipe mold.....	Aug. 2, 1870
106,489	Knight, Henry, England, instrument for clipping or shearing horses, &c.....	Oct. 18, 1870
109,325	Knight, Horatio D., Elgin, Ill. Machine for grinding and polishing lenses, &c.....	Nov. 15, 1870
103,625	Knight, James L., Tracy Creek, N. Y. Dining-table.....	May 31, 1870
107,785	Knight, Judson, Newark, N. J. Whiffletree-hook.....	Sept. 27, 1870
103,753	Knight, Judson, assignor to self and M. C. Brown, Whitestown, N. Y. Cow-tail holder.....	May 31, 1870
109,224	Knight, Margaret E., Boston, Mass. Paper-feeding machine.....	Nov. 15, 1870
104,858	Knight, William H., Boston Highlands, Mass. Securing veneers to wood.....	Nov. 28, 1870
109,913	Knisely, Christian, Chicago, Ill. Wrench.....	Dec. 6, 1870
104,602	Knitting-Machine Company. (See Davis, Blakeslee & Allen, assignors.) Knoche, John, assignor to self and Henry Varwig, Cincinnati, Ohio. Faucet.....	June 21, 1870
109,424	Knowles & Brooker. (See Morris, David, assignor.) Knowles, David, Philadelphia, Pa. Cotton and hay press.....	Nov. 22, 1870
108,157	Knowles, Isaac W., East Liverpool, Ohio. Manufacture of pottery-ware.....	Oct. 11, 1870
103,754	Knowles, Joseph C., New Bedford, Mass. Cricket and commode.....	May 31, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,465	Knowles, Lucius J., Worcester, Mass. Piston for steam-pumps .....	July 19, 1870
105,466	Same.....Piston-packing .....	July 19, 1870
105,813	Same.....Valve for steam and other pumps .....	July 26, 1870
106,267	Same.....Warren, Mass. Belt-shifting mechanism for looms .....	Aug. 9, 1870
110,146	Same.....Mechanism for operating shuttle-boxes in looms .....	Dec. 13, 1870
105,955	Knowles, Richmond O., Coolville, Ohio. Sliding wagon-seat .....	Aug. 2, 1870
99,914	Knowles, William R., Columbiana, Ohio. Trace-buckle for harness .....	Feb. 15, 1870
106,833	Knowles, William W., Bastrop, Texas. Cotton-press .....	Aug. 30, 1870
104,040	Knowles, Wilson W., Plantsville, Conn. Method of forming carriage-steps .....	June 7, 1870
105,876	Same.....Carriage-step .....	July 26, 1870
100,297	Knowlton, E. J., Ann Arbor, Mich. Portable bath .....	Mar. 1, 1870
99,915	Knowlton, George A., Natick, Mass. Black-ball for boot and shoe makers .....	Feb. 15, 1870
110,476	Knowlton, John C., Rockport, Mass. Attachment for rattlins .....	Dec. 27, 1870
106,374	Knowlton, John L., assignor to self and William H. Burr, Philadelphia, Pa. Lath-machine .....	Aug. 16, 1870
104,603	Knowlton, William F., assignor to self and William T. Clark, St. Cloud, Minn. Paddle-wheel .....	June 21, 1870
102,278	Knox, Charles, Chicopee, Mass. Tool-elevator for lathes .....	April 26, 1870
101,474	Knox, John M. (See Shaw, Daniel, assignor) .....	(Disclaimer.)
108,490	Knox, Melvin W., Sheridan, N. Y. Potato-digger .....	April 5, 1870
104,323	Same.....same .....	Oct. 18, 1870
3,938	Knox, Richard F., and Joseph Osborne, San Francisco, Cal. Furnace and condenser for reducing cinnabar and other volatile ores .....	June 14, 1870
3,861	Knox, Samuel A., and L. E. Sessions. (See Sessions & Knox.) .....	
104,324	Knox, Susan R., New York, N. Y. Fluting-machine .....	(Reissue) April 26, 1870
106,177	Knox, Susan R., and W. D. Corrister; said Corrister assignor to said Knox, New York, N. Y. Fluting-machine .....	(Reissue) Mar. 1, 1870
105,092	Knox, Thomas P., Boston, Mass. Violin .....	June 14, 1870
104,041	Knox, William C., Jacksonville, Ill. Grain separator and scourer .....	Aug. 9, 1870
107,786	Koch, George, New York, N. Y. Veneer-cutter .....	July 5, 1870
109,425	Koch, George and William, Franklin, Pa. Movable store-shelving .....	June 7, 1870
104,961	Koch, George, <i>et al.</i> (See Deeds, William S., assignor.) .....	
99,576	Koch, John C., and Bernard J. Beck, assignors to Koch, Sons & Co., Brooklyn, N. Y. Spool-holder .....	Sept. 27, 1870
99,209	Koch, John J., and D. F. Neikirk. (See Neikirk & Koch.) .....	
107,787	Kochensperger, Henry C., Thornville, Ohio. Wagon-iron .....	Nov. 22, 1870
102,684	Kock, William, Cincinnati, Ohio. Permutation-lock .....	July 5, 1870
109,225	Koechling, Bernhardt, New York, N. Y. Opera-chair .....	Feb. 8, 1870
101,629	Koehler, Charles, Rosiclare, Ill. Machine for rounding shot .....	Jan. 25, 1870
104,962	Koehler, George. (See Behm, John S., assignor.) .....	
101,630	Koehler, Hermann, New York, N. Y. Manufacture of spirits from starch .....	Sept. 27, 1870
99,210	Koeller, Hermann, Adams County, Ill. Seeding-machine .....	May 3, 1870
108,033	Same.....Camp Point, Ill. Corn-planter .....	Nov. 15, 1870
110,374	Kohler, John F. (See Parrott, Charles F., assignor.) .....	
104,165	Kohn, Tobias, Hartford, Conn. Picture-cord .....	April 5, 1870
106,178	Koll, Benjamin S., Pittsburgh, Pa. Hot-air furnace .....	July 5, 1870
101,277	Koller, Benjamin F., Shrewsbury, Pa. Scrubbing-brush .....	April 5, 1870
102,133	Komp, A., New York, N. Y. Railway-car wheel .....	Jan. 25, 1870
102,134	Same.....Sewing-machine .....	Oct. 4, 1870
107,923	Same.....Braiding-guide for sewing-machines .....	Dec. 20, 1870
4,005	Konold, Christian, Pittsburgh, Pa. Die for forging vise-boxes .....	June 14, 1870
107,387	Koontz, George S., and John B. Hill, Washington, D. C. Sleeping-car .....	Aug. 9, 1870
108,366	Kopas, John O., Washington, D. C. Washing-machine .....	Mar. 29, 1870
3,875	Kopas, John O., and George W. Baner, Washington, D. C. Animal-trap .....	April 19, 1870
105,093	Kopas, John O., assignor of one-half interest to Sydney Irving Wailes, Washington, D. C. Animal-trap .....	April 19, 1870
110,573	Korn, Charles, Wurtsborough, N. Y. Bark-mill .....	Oct. 4, 1870
109,023	Kornemann, Otto, and Julius Jungbluth, New York, N. Y. Trade-mark. Design .....	May 3, 1870
106,834	Kosinski, Wladyslaw T., Philadelphia, Pa. Coating for steam-pipes, boilers, &c. .....	Sept. 13, 1870
103,475	Same.....Brake for land-conveyance .....	Oct. 18, 1870
110,248	Kraatz, David K., assignor through mesne assignments to William Foos, John W. Bookwalter, Mary A. Leffel, and Lamar Foos, Ephrata, Pa. Water-wheel .....	(Reissue) Mar. 8, 1870
105,094	Krafft, Julius, Prussia. Magazine fire-arm. (Patented in Belgium Jan. 20, 1868) .....	July 5, 1870
106,835	Same.....Hoboken, N. J. Machine for cooling air and for the manufacture of ice .....	Dec. 27, 1870
102,836	Krafft, Albert, assignor to F. G. Utasey & Co., Prussia. Medium for turning music-sheets .....	Nov. 8, 1870
100,155	Kraft, Joseph, Newark, N. J. Machinery for painting oil-cloth, &c. .....	Aug. 30, 1870
107,065	Kraink, George, and Thomas N. Dale, jr. (See Dale & Kraink) .....	(Two cases.)
108,034	Krall, Jesse, Hall, Pa. Water-wheel .....	May 24, 1870
105,814	Kramer, Andrew J., Marion, Iowa. Sash-holder .....	Dec. 20, 1870
102,836	Kramer, Charles F., Mondovia, Wis. Settee, bed, and table .....	July 5, 1870
100,155	Kramer, John W., Bloomsburgh, Pa. Door-strip .....	Aug. 30, 1870
107,065	Kramer, William, New York, N. Y. Heating-plasters .....	May 10, 1870
108,034	Krandelt, Frank, San Francisco, Cal. Egg-beater .....	Feb. 22, 1870
105,814	Krath, Conrad, and Gustav H. Moll, St. Louis, Mo. Combination game-board .....	Sept. 6, 1870
107,923	Kraus, Frederic, Cincinnati, Ohio. Putting-up medicine .....	Oct. 4, 1870
105,814	Kraus, John, assignor to self and Henry Lapp, Clarence, N. Y. Stall for preventing cribbing .....	July 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,626	Kraus, Philip, Augusta, Ga. Grinding-mill.	May 31, 1870
108,707	Krausch, Theodore, New York, N. Y. Cooling buildings	Oct. 25, 1870
110,249	Krause, Frederick C., assignor to Samuel A. Walsh, New York, N. Y. Clay retort for the manufacture of gas.	Dec. 30, 1870
102,947	Krauser, Daniel H., Pottsville, Pa. Counter-seat. Krebs, Fannie, and Annie Vogel. (See Vogel & Krebs.)	May 10, 1870
103,058	Krehbril, John, Clarence Centre, N. Y. Potato-planter	May 17, 1870
100,906	Krejci, Camille, Scranton, Pa. Life-preserver.	Mar. 15, 1870
102,018	Krepps, James William, Chicago, Ill. Apparatus for removing oils, grease, gums, and the like, from cotton and woolen waste, and recovering the same.	April 19, 1870
107,788	Kretser, Joel L., Tusten, Wis. Pitman-head	Sept. 27, 1870
4,037	Kreuzinger, Ludwig, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Door-knob (Design)	June 7, 1870
4,098	Same same same (Design)	June 7, 1870
4,099	Same same same (Design)	June 7, 1870
4,100	Same same same (Design)	June 7, 1870
4,101	Same Door-knob rose same (Design)	June 7, 1870
4,102	Same same same (Design)	June 7, 1870
4,103	Same same same (Design)	June 7, 1870
4,104	Same Escutcheon (Design)	June 7, 1870
4,105	Same same same (Design)	June 7, 1870
4,106	Same same same (Design)	June 7, 1870
99,916	Krichbaum, John G., Youngstown, Ohio. Stove-shelf.	Feb. 15, 1870
4,188	Kroeger, Werner, assignor to William Frankfurth, Milwaukee, Wis. Vessel for boiling (Reissue)	Nov. 29, 1870
102,557	Kröger, Albert E., Norwalk, Conn. Shoe-fastening	May 3, 1870
4,019	Kroh, Calvin Z., Tiffin, Ohio. Curtain-knob (Reissue)	June 7, 1870
101,369	Krug, Henry, New York, N. Y. Extension gas-fixture	Mar. 29, 1870
101,631	Krumme, Henry F. C., Ridgway, Pa. Storing power in pneumatic locomotives.	April 5, 1870
99,211	Krüss, A., Germany. Magic-lantern	Jan. 25, 1870
101,889	Kubby, John Frederic, New York, N. Y., and Charles Frederic Crailsheim, France. Bottle for gaseous liquids	April 12, 1870
103,200	Kuehnle, John, Cincinnati, Ohio. Cutter-head for planing-machines	May 17, 1870
106,836	Kuhlmann, Hermann, Cincinnati, Ohio. Churn	Aug. 30, 1870
103,201	Kuhns, William Jacob, Brooklyn, N. Y. Nickel plating	May 17, 1870
4,107	Kunze, Charles, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Door-knob (Design)	June 7, 1870
109,521	Kunze, Ludwig O., Harrisonville, Mo. Apparatus for detaching poles and shafts from vehicles.	Nov. 22, 1870
99,778	Kurfass, Charles, Louisville, Ky. Sofa-lounge	Feb. 15, 1870
105,095	Kursheedt, Frederic A., New York, N. Y. Plated trimmings	July 5, 1870
98,696	Kurtz, Henry, Washington, D. C. Machine for dressing felloes	Jan. 11, 1870
101,136	Kurtz, J. C., Wooster, Ohio. Broadcast-seeder	Mar. 22, 1870
103,202	Kurtz, Lewis E., Baltimore, Md. Automatic railway-switch	May 17, 1870
104,963	Kurtz, William, New York, N. Y. Photographic reflector	July 5, 1870
103,345	Kurtzmann, Christian, Buffalo, N. Y. Piano	May 24, 1870
105,815	La Banister, William, and Lorenzo V. Daggett, Pacific, Wis. Spinning-machine.	July 26, 1870
98,872	Labar, James P., Milford, Mich. Sash stop and holder.	Jan. 18, 1870
	Labaree, J. W. (See Hitchcock, M. T., assignor) (Two cases.)	
	Same same same (Reissue.)	
	Same (See Sawyer, Charles B., assignor.)	
109,024	Labertaux, Tunis, and William J. Avery. (See Avery & Labertaux.)	
3,835	La Boiteaux, Frank M., College Hill, Ohio. Button-fastening	Nov. 8, 1870
	La Breche-Viger, Louis, assignor to William W. Averell, Montreal, Canada. Manufacture of cast steel (Reissue)	Feb. 15, 1870
4,153	Same same same (Reissue)	Oct. 11, 1870
4,115	Lacy, Daniel B., assignor through mesne assignments to self, Isaac A., and Thomas T. Lacey, Mott Haven, N. Y. Weight for sashes, clocks, &c. (Reissue)	Sept. 6, 1870
107,183	Lackey, Gasway O., Akron, Ohio. Horse hay-rake	Sept. 6, 1870
103,708	Same Door and alarm bell	Oct. 25, 1870
108,035	Ladd, Alexander, St. Lawrence, N. Y. Churn	Oct. 4, 1870
110,574	Ladd, Calvin P., assignor to self and James T. Sanford, New York, N. Y. Felt-ing-machine	Dec. 27, 1870
99,093	Ladd, Dennis, Chicago, Ill. Grain-separator	Jan. 25, 1870
102,685	Ladd, George W., and F. W. Copcutt, New York, N. Y. Bottle-stopper	May 3, 1870
107,509	Ladd, Hermon W., Chelsea, Mass. Bedstead or cot. (Antedated Sept. 8, 1870)	Sept. 20, 1870
99,779	Ladd, Hermon W. and George F., Chelsea, Mass. Spring-bed	Feb. 15, 1870
	Ladd, James E., and Harry F. Henderson. (See Henderson & Ladd.)	
	Ladd, Nathaniel. (See Behr, Edward, assignor) (Reissue.)	
104,742	Ladner, Albert H., and Thomas F. Fenlin, Philadelphia, Pa. Apparatus for elevating beer	June 28, 1870
99,212	Ladow, Jacob S., Mechanicsville, N. Y. Clamp	Jan. 25, 1870
106,491	Lafferty, Hugh W. and Robert, Gloucester City, N. J. Centrifugal sugar-draining machine. (Antedated Aug. 5, 1870)	Aug. 16, 1870
104,604	Lafferty, Robert M., assignor to self and Edward P. Smith, Three Rivers, Mich. Pump	June 21, 1870
	Lafflin, Joshua. (See Werst, Decatur, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,166	Lafin, George L. (See Baker, Albert C., assignor.) Lafin, Matthew, and Enos Slosson, assignors to Matthew Lafin, Chicago, Ill. Plow	June 14, 1870
102,558	La Fontaine, John A., et al. (See Lee, La Fontaine & Harris.) Laforge, Joel, and Jonathan T. Crane, Rahway, N. J. Coal-stove. (Antedated April 18, 1870)	May 3, 1870
101,025	La France, Peter A., and J. D. Densmore, Elmira, N. Y. Sign	Mar. 23, 1870
98,697	La France, T. S., Elmira, N. Y. Safety-valve	Jan. 11, 1870
104,167	Same.....Steam-generator	June 14, 1870
108,604	Same.....same	Oct. 25, 1870
105,096	Lahaye, John J., and John E. Wootten, Reading, Pa. Axle-box	July 5, 1870
105,224	Laighton, Samuel, Newark, N. J. Fever and ague medicine	July 12, 1870
108,158	Laighton, William S., Norwich, Conn. Apparatus for precipitating gold and silver from solutions	Oct. 11, 1870
3,968	Lair, Philip, assignor to Hartell & Letchworth, Philadelphia, Pa. Shade for gas or lamp burners (Design)	April 12, 1870
103,476	Laird, Hugh, Mechanicsburgh, Pa. Cultivator	May 24, 1870
105,956	Lake, James K., Chicago, Ill. Traction-engine	Aug. 2, 1870
106,943	Lake, Jennie L., Brooklyn, N. Y. Sewing-machine	Aug. 30, 1870
	Lake, William B., et al. (See Samuels, John L., assignor) (Reissue.)	
	Laman, Carrie R. (See Raplee, Abijah L., assignor.)	
	Lamason, B. P., and S. W. Murray. (See Murray & Lamason.)	
109,522	Lamson, Benjamin P., and Joseph D. Potts. (See Potts & Lamason.)	
103,627	Lamb, Charles, Binghamton, N. Y. Grain-register	Nov. 22, 1870
109,632	Lamb, George, Boston, Mass. Picture-hanger	May 31, 1870
107,924	Lamb, Isaac W., Northville, Mich. (Sewing-machine)	Nov. 29, 1870
	Lamb, James, Hubbardston, Mass. Rocking or tilting chair	Oct. 4, 1870
	Lamb, James, et al. (See Stewart, Klinderman & Lamb.)	
	Lamb, James C., and Erwin Lavens. (See Lavens & Lamb.)	
99,917	Lamb, Lysander L., Fitchburgh, Mass. Sliding-square and calipers	Feb. 15, 1870
100,156	Lamb, Martin T., Davenport, Iowa. Steam clothes-washer	Feb. 22, 1870
100,157	Lamb, Salem T., New Albany, Ind. Pitman-connection	Feb. 22, 1870
100,158	Same.....Pitman-joint for harvesters	Feb. 22, 1870
100,159	Same.....same	Feb. 22, 1870
105,343	Lamb, Salem T., and William N. Whiteley, Springfield, Ohio. Harvester	July 12, 1870
101,137	Lamb, Thomas, Philadelphia, Pa. Sewing-machine	Mar. 22, 1870
108,605	Lambart, Richard C., assignor to David Whittemore, South Abington, Mass. MacLine for cutting heels of boots and shoes	Oct. 25, 1870
182,135	Lambe, Frederick, England. Treating paraffine and obtaining it in crystals	April 19, 1870
101,026	Lambert, Catholina, assignor to Dexter, Lambert & Co., Paterson, N. J. Woven trimming	Mar. 22, 1870
100,642	Lambert, George D., New Haven, Conn. Clamp	Mar. 8, 1870
109,426	Lambert, James R., sr., and James R., jr., Rockville, Ind. Sawing-machine	Nov. 22, 1870
109,025	Lambert, Jean, jr., assignor to Gustave Bourgade, New York, N. Y. Removing dyes made from aniline, &c., from portions of fabrics	Nov. 8, 1870
105,581	Lamm, Emile, New Orleans, La. Ammoniacal gas-engine	July 19, 1870
	Lammers, William, and William H. Curtin. (See Curtin & Lammers.)	
107,066	La Montagne, George, Muskegon, Mich. Pectoral sirup or medicine	Sept. 6, 1870
105,699	La Mothe, Bernard J., New York, N. Y. Metallic railway-car	July 26, 1870
3,839	Lampert, Henry, Rochester, N. Y. Apparatus for scraping and working hides (Reissue)	Feb. 15, 1870
100,907	Same.....Apparatus for working hides	Mar. 15, 1870
101,183	Lamphear, Edson, Stepney, Conn. Pump	Mar. 22, 1870
	Lamson, Daniel, deceased, by Emily J. Lamson, administratrix, Weymouth, Mass. Machinery for notching hoops (Extension)	Sept. 13, 1870
	Lamson, Ebenezer G., and F. C. Treadwell, jr. (See Treadwell & Lamson.)	
101,139	Lamson, Ebenezer G., Windsor, Vt. Table-cutlery	Mar. 22, 1870
4,189	Same.....Stone-channeling machine (Reissue)	Nov. 23, 1870
110,375	Same.....Stone drilling and channeling machine	Dec. 20, 1870
110,376	Same.....Stone-channeling machine	
	Same.....(See Moore, David M., assignor.)	
4,164	Lance, William L. (See Hatcher, William Z., assignor) (Two cases.)	
4,165	Landenberger, Martin, Philadelphia, Pa. Baschlik (Design)	June 21, 1870
4,182	Same.....Shape for a hood (Design)	June 21, 1870
4,186	Same.....Trade-mark (Design)	June 23, 1870
4,221	Same.....same (Design)	June 25, 1870
4,230	Same.....Knit skating-cap (Design)	July 12, 1870
4,231	Same.....Knitted fabric (Design)	July 19, 1870
4,232	Same.....Knitted goods (Design)	July 19, 1870
4,233	Same.....same (Design)	July 19, 1870
4,234	Same.....Shawl (Design)	July 19, 1870
4,235	Same.....same (Design)	July 19, 1870
4,270	Same.....Knitted fabric (Design)	July 19, 1870
4,271	Same.....Shawl fabric (Design)	Aug. 2, 1870
4,272	Same.....same (Design)	Aug. 2, 1870
4,358	Same.....same (Design)	Sept. 20, 1870
4,443	Same.....Dress-trimming (Design)	Oct. 25, 1870
102,686	Landers, Fray & Clark. (See Harkness, Hiram W., assignor.) Landert, William, and John Deggeller, Chicago, Ill. Compound for treating rheumatism	May 3, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,837	Landes, Jacob M., Souders, Pa. Combined plow and cultivator.....	Aug. 30, 1870
109,427	Landfear, William R., Hartford, Conn. Sewing-machine.....	Nov. 22, 1870
99,447	Landis, Israel, St. Joseph, Mo. Saddle-tree.....	Feb. 1, 1870
109,428	Landis, Jacob S., Lancaster, Pa. Combined thrasher and grain-separator.....	Nov. 22, 1870
100,045	Landrine, G., Jersey City, N. J. Culinary vessel.....	Feb. 22, 1870
106,839	Landry, Alcide, East Baton Rouge, La. Sugar-cane scraper.....	Aug. 30, 1870
	Lane & Bodley. (See Schmackers, Anton, assignor.)	
107,789	Lane, Dennis, Montpelier, Vt. Water-wheel.....	Sept. 27, 1870
93,918	Lane, George, New York, N. Y. Neck-tie.....	Feb. 15, 1870
107,388	Lane, George M., DeGraff, Ohio. Papering-machine.....	Sept. 13, 1870
103,799	Lane, George W., assignor to Elisha R. Newell, Plantsville, Conn. Divider and calipers.....	Nov. 1, 1870
	Lane, H. C. (See Hill, R. A., assignor)..... (Reissue.)	
104,964	Lane, John, assignor to self, Charles H. Hapgood, William B. Young, and G. H. Laughton, Chicago, Ill. Plow.....	July 5, 1870
106,838	Same..... Manufacture of plow-shares.....	Aug. 30, 1870
107,925	Lane, John, assignor to Hapgood & Co., Chicago, Ill. Mold-board for plows.....	Oct. 4, 1870
110,575	Lane, John G., St. Louis, Mo. Trunk.....	Dec. 27, 1870
	Lane, Julius S., and Julian H. Pitkir. (See Pitkir & Lane.)	
107,926	Lane, Rufus, assignor of one-half interest to W. G. Moore, Freeport, Ill. Car-pusher.....	Oct. 4, 1870
105,582	Laney, Robert V., Cumberland, Md. Hook.....	July 19, 1870
	Lang, John H. B. (See Wiley, Moses H., assignor)..... (Two cases.)	
	Same..... same..... (Reissue.)	
	Same..... (See Wiley & Miller, assignors.)	
100,643	Langdon, Sylvester L., New Orleans, La. Motive power for carriages.....	Mar. 8, 1870
4,078	Langhorne, George W. and John D., and Nathaniel B. Johnston, Lynchburgh, Va. Trade-mark..... (Design)	May 31, 1870
4,079	Same..... same..... (Design)	May 31, 1870
99,919	Langhorne, M., Washington, D. C. Lock-nut.....	Feb. 15, 1870
	Langley, James, jr. (See Bean, Charles, assignor.)	
98,602	Langston, Thomas, Meriden, Conn. Lantern.....	Jan. 4, 1870
107,067	Langtree, John, New York, N. Y. Paper for printing, writing, and other purposes.....	Sept. 6, 1870
102,687	Lanham, William M., Noblesville, Ind. Plow.....	May 3, 1870
	Laning, Joseph H., and John S. Morton. (See Morton & Laning.)	
	Laning, Joshua F., et al. (See Kitson, Laning & Benner.)	
103,203	Lannay, Edward, Mowrytown, Ohio. Clod-fender and pulverizing-attachment for plows.....	May 17, 1870
107,694	Lanphear, Albert N., Atchison, Kans. Chimney-attachment.....	Sept. 27, 1870
109,745	Lansing, Arthur Livingston, assignor to Henry Seymour Lansing, Philadelphia, Pa. Ramming-machine for wood and other pavements.....	Nov. 29, 1870
103,644	Lanston, Tolbert, Washington, D. C. Padlock.....	Mar. 8, 1870
	Lantz, Samuel, and George Burket. (See Burket & Lantz.)	
104,168	Lapham, Levi S., assignor to Mary S. Brown, Providence, R. I. Oil-pump.....	June 14, 1870
	Lapp, Henry. (See Kraus, John, assignor.)	
	Largay, James A. (See Hall, John D., assignor.)	
105,595	Larkin, George G., Portland, Me. Stay for carriages.....	Aug. 23, 1870
102,410	Larkin, James, Detroit, Mich. Slide-valve.....	April 26, 1870
	Larkin, James E. (See Varnum, Henry C., assignor.)	
106,275	Larkin, Orville L., Otto, N. Y. Fence-post.....	Aug. 16, 1870
106,492	La Rose, John L., Leavenworth, Kans. Washing-machine.....	Aug. 16, 1870
	Larru, Julien. (See Maunthi, Henry, assignor.)	
101,632	Larry, John H., Weston, Mass. Permutation-lock.....	April 5, 1870
103,204	La Rue, Silas Hoffman, Allentown, Pa. Cooking-stove.....	May 17, 1870
105,816	Same..... Heating-stove.....	July 26, 1870
4,157	Same..... Cooking-stove..... (Reissue)	Oct. 18, 1870
4,175	Same..... Heating-stove..... (Reissue)	Nov. 8, 1870
109,326	Lash, John Fannon, Toronto, Canada. Opening and shutting device for railroad-car windows.....	Nov. 15, 1870
	La Société Central des Betons Systeme Coignet. (See Coignet, Francois, assignor.)	
99,094	Lassing, Henry, New York, N. Y. Mode of preparing seed for planting.....	Jan. 25, 1870
101,027	Lastreto, Luigi F., San Francisco, Cal. Medicinal beverage.....	Mar. 22, 1870
4,166	Latham, Cyrus H., Lowell, Mass. Table-caster..... (Design)	June 21, 1870
104,743	Latham, Cyrus H., assignor to Woods, Sherwood & Co., Lowell, Mass. Table-caster.....	June 28, 1870
4,208	Same..... same..... (Division A, reissue)	Dec. 20, 1870
4,209	Same..... Cup for casters, &c..... (Division B, reissue)	Dec. 20, 1870
	Latham, C. H., et al. (See Sherwood, Daniel, assignor.)	
	Same..... same..... (Reissue.)	
93,326	Lathrop, H. D., and Albert Gay, Bedford, Ohio. Computing-arrangement for weighing-scales.....	Feb. 1, 1870
104,744	Lathrop, John D., assignor through mesne assignments to Lippiatt, Maltby & Morse, New York, N. Y. Engraving-machine.....	Jan. 28, 1870
108,915	Lathrop, Lebbeus W., Poughkeepsie, N. Y. Motive-power apparatus.....	Nov. 1, 1870
110,250	Same..... Sewing-machine.....	Dec. 20, 1870
108,367	Lathrop, William P., West Winsted, Conn. Boring-tool.....	Oct. 18, 1870
	Latimer, George W., and Peter McManus. (See McManus & Latimer.)	
104,605	Latimer, James F., Detroit, Mich. Water-elevator.....	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Latrobe, C. H., <i>et al.</i> (See Smith, Latrobe & Smith.)	
101,278	Laubser, Joseph, Milwaukee, Wis. Ratchet-drill.	Mar. 29, 1870
102,837	Lauer, Henry, and Henry C. Reichard, Pottsville, Pa. Vegetable-cutter.	May 10, 1870
100,418	Laughlin, Patrick, Danville, Ky. Cistern-filter.	Mar. 1, 1870
103,206	Same..... Filter for cisterns.	May 17, 1870
	Laughton, G. H., <i>et al.</i> (See Lane, John, assignor)..... (Two cases.)	
107,927	Lauritzen, Johan, Newark, N. J. Cigar-machine.	Oct. 4, 1870
102,136	Lavens, Erwin, and James C. Lamb, Middletown, Conn. Rotary pump.	April 19, 1870
103,205	Law, Albert H., San Francisco, Cal. Anchor.	May 17, 1870
103,429	Same..... Sewing-thimble.	Nov. 22, 1870
104,169	Law, Hervey, Chatham, N. J. Paper-bag machine.	June 14, 1870
102,559	Law, William C., New York, N. Y. Boat's rudder.	May 3, 1870
103,059	Law, William H., England. Steam-generator.	May 17, 1870
100,298	Lawbaugh, G. W., Geneseo, Ill. Double-shovel plow. (Antedated Feb. 25, 1870).	Mar. 1, 1870
107,790	Lawbaugh, Orange C., Shanesville, Ohio. Wrench.	Sept. 27, 1870
109,633	Lawe, Alexander, Kingston, Canada. Electro-plating iron and steel with silver.	Nov. 29, 1870
	Lawford, Jasper M., and James Henderson. (See Player, John, assignor)..... (Re-issue)..... (Two cases.)	
	Lawler, Patrick H., <i>et al.</i> (See Dougherty, John B., assignor.)	
	Lawrence & Cohen. (See Cohen, Solomon L., assignor)..... (Two cases.) (Design.)	
110,147	Lawrence, Andrew, Louisville, Ky. Side-saddle tree.	Dec. 13, 1870
100,534	Lawrence, Charles, Cincinnati, Ohio. Carbureting air.	Mar. 8, 1870
110,477	Lawrence, Harry, New York, N. Y. Vine and weed cutter.	Dec. 27, 1870
109,133	Lawrence, Henry, New Orleans, La. Neck-tie retainer.	Nov. 8, 1870
	Lawrence, H. H. (See Nichols, William T., assignor.)	
	Lawrence, James, <i>et al.</i> (See Thomas, Daniel W., assignor)..... (Design.)	
104,859	Lawrence, Nathan, Taunton, Mass. Call-bell and slop-bowl.	June 28, 1870
106,840	Same..... Call-bell and vessel.	Aug. 30, 1870
105,156	Lawrence, Perley H., Petroleum Centre, Pa. Apparatus for cutting the casings or tubes of oil-wells.	July 5, 1870
	Lawrence, Philip W., <i>et al.</i> (See Wilson, Joseph B., assignor.)	
106,596	Lawrence, Robert B., Wheeling, W. Va. Pen-holder.	Aug. 23, 1870
108,916	Same..... same.	Nov. 1, 1870
108,709	Lawrence, Samuel W., Philo Walden, and Joseph W. Huntoon, West Eaton, N. Y. Drawing and twisting head for spinning-machines.	Oct. 25, 1870
107,389	Lawrence, Theodore, assignor of one-half interest to Romeo Lawrence, Peoria, Ill. Hat and cap bracket. (Antedated Sept. 3, 1870).	Sept. 13, 1870
110,576	Lawrence, William E., New York, N. Y. Curry-comb.	Dec. 27, 1870
102,948	Laws, Albert D., Bridgeport, Conn. Hydraulic-engine.	May 10, 1870
99,273	Laws, Samuel S., assignor to Gold and Stock Telegraph Company, New York, N. Y. Printing-telegraph.	Jan. 25, 1870
102,279	Lawsha, Arthur P., Harper's Ferry, W. Va. Mill-burr feeder.	April 26, 1870
110,478	Lawson, Balaam C., Yolo County, Cal. Washing-machine.	Dec. 27, 1870
106,841	Lawton, Alfred, Philadelphia, Pa. Elevator.	Aug. 30, 1870
	Lawton, Edwin B., and Horace A. Nettleton. (See Nettleton & Lawton.)	
109,634	Lawton, Walter A., Providence, R. I. Feed-mechanism of carding-machines.	Nov. 22, 1870
	Lawton, William H., and Theodore J. Southworth. (See Southworth & Lawton.)	
101,140	Lawyer, Ralph, and John C. Gasten, Pittsburgh, Pa. Sewing-machine.	Nov. 22, 1870
106,842	Layaux, Francis, Monroe, La. Bedstead-tester.	Aug. 30, 1870
110,050	Laycock, William S., England. Loom.	Dec. 13, 1870
102,280	Leach, Adin H., Marathon, N. Y. Carriage-wheel.	April 26, 1870
108,800	Leach, George, England. Shipping and unshipping screw-propellers.	Nov. 1, 1870
110,148	Leach, Joseph, New Harmony, Ind. Cover for tea and coffee cups. (Antedated Dec. 6, 1870).	Dec. 13, 1870
102,281	Leach, Joseph D., Penobscot, Me. Navigators' bearing-indicator.	April 26, 1870
100,419	Leach, Sewall, assignor to self, J. D. Leach, and Sabiu Hutchings, Penobscot, Me. Rudder-collar. (Antedated Feb. 19, 1870).	Mar. 1, 1870
106,066	Leach, Thomas, assignor to Henry G. Reed, George Brabrook, and Henry H. Fish, Taunton, Mass. Cup and bell.	Aug. 2, 1870
4,273	Leak, James, assignor to self, Thomas G. White, and William Holmes, Geddes, N. Y. Flower-pot. (Design.)	Aug. 2, 1870
4,449	Same..... same. (Design.)	Nov. 1, 1870
109,626	Leak, Tilman F., Montgomery, Ala. Parlor-skate.	Nov. 8, 1870
103,207	Leaman, N. Edward, Dayton, Ohio. Car-coupling.	May 17, 1870
109,027	Lear, Frederick, St. Louis, Mo. Coloring and preserving wood.	Nov. 8, 1870
103,628	Leary, Lemuel W., Norfolk, Va. Lantern. (Antedated May 24, 1870).	May 31, 1870
104,745	Same..... same.	June 28, 1870
107,617	Same..... Lamp-wick regulator.	Sept. 20, 1870
	Leasure, Henry J., and Roy Combs. (See Combs & Leasure.)	
108,159	Leatherman, Peter R., Woodville, Miss. Cotton-cultivator.	Oct. 11, 1870
	Leathery, Samuel. (See Mickley, Solomon, assignor.)	
106,179	Leavitt, Charles P., New York, N. Y. Belt-guide.	Aug. 9, 1870
107,928	Same..... Hot-air engine.	Oct. 4, 1870
109,430	Same..... Drawing-frame.	Nov. 22, 1870
100,645	Leavitt, Thomas, and E. L. Howard, Malden, Mass. Fluting-machine.	Mar. 8, 1870
110,051	Leavitt, Thomas, assignor to Sorrento Wood-Carving Company, Boston, Mass. Buhl-saw.	Dec. 13, 1870
101,890	Lebby, N. H., Charleston, S. C. Ore-washing machine.	April 12, 1870
104,606	Lebeau, John J., Cincinnati, Ohio. Clamp.	June 21, 1870
4,112	Same..... Paring-knife. (Re-issue).	Aug. 30, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,028	Le Blanc, Auguste, Louisiana, La. Cotton-plant protector .....	Mar. 22, 1870
107,510	Lebo, Isaac, Winterville, Pa. Thrashing-machine separator .....	Sept. 20, 1870
104,965	Lechler, Martin, New York, N. Y. Folding-chair .....	July 5, 1870
104,746	Leckenby, George, Western, Mo. Rotary steam-valve .....	June 28, 1870
99,327	Leclerc, François, assignor to Moses Eames, Watertown, N. Y. Blind-slat machine .....	Feb. 1, 1870
100,160	Le Comte, Joseph, Brooklyn, N. Y. Soldering-machine .....	Feb. 22, 1870
104,747	Le Comte, Joseph, and George H. Perkins, Brooklyn, N. Y. Sheet-metal can .....	June 28, 1870
	Lederle, Joseph and Anthony, <i>et al.</i> (See Bailey, John A., assignor.) .....	
100,420	Ledmun, William E., Bridgeville, Del. Funnel .....	Mar. 1, 1870
93,603	Lee, Benjamin F., New York, N. Y. Hose .....	Jan. 4, 1870
109,134	Lee, Edwin F., New York, N. Y. Button-fastening .....	Nov. 8, 1870
104,860	Lee, George W., and John A. La Fontaine, Barlow County, and Asa L. Harris, Atlanta, Ga. Railway-switch .....	June 28, 1870
105,344	Lee, George W., assignor to self and C. Aultman, Homeworth, Ohio. Thrashing-machine .....	July 12, 1870
102,137	Lee, Harvey Thomas, Marysville, Cal. Piston-rod packing .....	April 19, 1870
102,282	Same .....	April 26, 1870
108,491	Same .....	Oct. 18, 1870
103,060	Lee, Henry, Washington, D. C. Corpse-preserver .....	May 17, 1870
102,283	Lee, Hugh, Beloit, Wis. Manufacture of railroad-rails .....	April 26, 1870
99,328	Lee, Joel, Galesburgh, Ill. Stalk-cutter .....	Feb. 1, 1870
110,479	Lee, John and Mark, and William Carter, Needham, Mass. Knitting-machine .....	Dec. 27, 1870
4,113	Lee, John A., assignor through mesne assignments to Robert D. Mann, Chattanooga, Tenn. Animal-trap .....	Aug. 30, 1870
101,279	Lee, Philester, and Lemuel Matthews, Lebanon, Oreg. Medical compound .....	Mar. 29, 1870
100,535	Lee, William, New Haven, Conn. Corrugation of boot and shoe uppers. (Antedated Feb. 26, 1870) .....	Mar. 8, 1870
	Leeds, Joseph. (See Coates, William B., assignor) .....	(Three cases.)
103,036	Leedy, John K., Maurertown, Va. Hominy-mill .....	Oct. 4, 1870
108,710	Leete, Isaac P., Philadelphia, Pa. Steam-atomizer .....	Oct. 23, 1870
106,944	Leete, Ursula L., Owego, N. Y. Vapor-bath apparatus .....	Aug. 30, 1870
107,068	Same .....	Sept. 6, 1870
	Le Favour, Heber. (See Hope, John & Thomas, assignors) .....	(Reissue.)
100,046	Lefebere, Zephaniah A. F., and James H. Davis, Plattsburgh, N. Y. Clasp for securing whip-sockets to dash-boards .....	Feb. 22, 1870
101,280	Lefevre, Desire Parfait, and Louis Phillipe Dorre, France. Railway-car brake .....	Mar. 29, 1870
	Leffel, James, & Co. (See Trump, Fuller, assignor.) .....	
107,732	Leffel, Joseph, and Edward Harrison, Springfield, Ohio. Bee-hive .....	Sept. 27, 1870
	Leffel, Mary A., <i>et al.</i> (See Kraatz, David K., assignor) .....	(Reissue.)
	Lefterts, Marshall. (See Finley, Stephen L., assignor.) .....	
99,448	Leforgee, James A., Decatur, Ill. Spring-holder for wagon-seats .....	Feb. 1, 1870
	Lefort, Henry. (See Cattaneo, Angelo, assignor.) .....	
106,700	Lefranc, Emile, and Joseph Nagoua, New Orleans, La. Machine for treating ramie and other textile plants .....	Aug. 23, 1870
4,108	Leger, Joseph L., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Door-knob .....	June 7, 1870
109,827	Lehman, Julius, New York, N. Y. Pocket-box .....	Dec. 6, 1870
104,966	Lehman, Louis, assignor to Daniel W. Fish, Buffalo, N. Y. Spike-extractor .....	July 5, 1870
104,967	Same .....	July 5, 1870
101,281	Lehmann, Charles, Hartford, Conn. Stirrer and egg-beater .....	Mar. 29, 1870
102,949	Same .....	May 10, 1870
109,226	Lehmann, Leopold, Monee, Ill. Combined agricultural implement .....	Nov. 15, 1870
107,791	Lehnert, Carl, assignor to Benjamin F. Richardson, West Roxbury, Mass. Music-stand .....	Sept. 27, 1870
	Lehr, Ferdinand A. (See Okey, Joseph B., assignor.) .....	
	Lehr, J. G., and H. D. Thorp. (See Thorp & Lehr.) .....	
102,688	Leidecker, Michael, Rochester, N. Y. Barber and dental chair .....	May 3, 1870
	Leighton, L. A. (See Sweet, D. F., assignor.) .....	
3,829	Leighton, William, jr., Wheeling, W. Va. Ornamenting glass-ware .....	Feb. 1, 1870
101,745	Leighton, William E., Pembroke, Me. Belt-shifter .....	April 12, 1870
106,701	Leilich, Frank T., assignor to self and Michael Leilich, Frederick, Md. Adding-machine .....	Aug. 23, 1870
104,042	Leitch, J. Fred, Oxford, N. Y. Cultivating-hook .....	June 7, 1870
	Leitch, Robert. (See Somerville, Thomas, assignor.) .....	
	Le Lubez, P. A. Victor. (See Le Roy, Ferdinand, assignor) .....	(Reissue.)
	Lemerrier, Jacques Eugene, and Henri N. Moyon. (See Moyon & Lemerrier.) .....	
103,346	Lemman, John, Cincinnati, Ohio. Parlor-skate .....	May 24, 1870
107,618	Same .....	Sept. 20, 1870
4,028	Lemman, John, assignor to James L. Haven & Company, Cincinnati, Ohio. Bedstead-fastening .....	June 14, 1870
104,861	Lenhart, Philipp F., Brooklyn, N. Y. Water-proof sweat-band for hats and caps .....	June 23, 1870
109,135	Lennox, C. S. S. (See Scott, Francis B., assignor.) .....	
	Lennox, Patrick, Lynn, Mass. Hide-beaming machine. (Antedated Nov. 4, 1870) .....	Nov. 8, 1870
104,607	Lennox, Edwin F., and Charles Eckhart, Trenton, N. J. Corpse-preserver .....	June 21, 1870
102,284	Lenox, Hiram, Trenton, N. J. Mode of lighting street-lamps .....	April 26, 1870
100,776	Lenz, Charles Philipp, Poughkeepsie, N. Y. Extension-table .....	Mar. 15, 1870
3,949	Same .....	May 3, 1870
	Lenzi, George A., and W. S. Burgess. (See Burgess & Lenzi.) .....	



## Alphabetical list of patentees for the year 1870—Continued.

No.	Name, residence, and invention or discovery.	Date.
106,702	Leonard, Augustus, Newell's Run, Ohio. Potato-plow.....	Aug. 23, 1870
108,711	Leonard, Daniel, Chicago, Ill. Vapor-burner.....	Oct. 25, 1870
98,506	Leonard, Dennis, Winsted, Conn. Casket-handle.....	Jan. 4, 1870
98,982	Leonard, George D., New York, N. Y. Show-case for silks, cottons, &c.....	Jan. 18, 1870
101,475	Same.....Counter show-case. (Antedated Jan. 6, 1870).....	April 5, 1870
110,251	Leonard, John M., Marshall City, Mich. Adjustable plow-jointers.....	Dec. 20, 1870
	Leonard, Joseph B., <i>et al.</i> (See Grceley, John P., assignor.)	
99,920	Leonard, J. N., Rockville, Conn. Show-case for spools and other articles. (Antedated Feb. 14, 1870).....	Feb. 15, 1870
100,047	Leonard, Philip, Sharon, Pa. Tool-holder for grindstones.....	Feb. 22, 1870
109,635	Leonard, Stephen C., England. Lifting-jack.....	Nov. 22, 1870
106,377	Leonard, Volney, Springfield, Pa. Bee-hive.....	Aug. 16, 1870
110,377	Leonard, William E., Boston, Mass. Breast-collar for horses.....	Dec. 20, 1870
109,431	Le Plongeon, Augustus, San Francisco, Cal. Halter for horses.....	Nov. 22, 1870
103,347	Lepp, Mitchell, Albany, N. Y. Saw-table. (Antedated May 17, 1870).....	May 24, 1870
103,897	Lepper, Benjamin, St. Louis, Mo. Street-car starter.....	June 7, 1870
106,376	Lerch, John, Uhlersville, Pa. Harrow and cultivator.....	Aug. 16, 1870
	Lerew, A. B. (See Hersch, Noah F., assignor.)	
4,095	Le Roy, Ferdinand, deceased, by Ferdinand Leroy, administrator, and P. A. Victor Le Lubez, assignee, England. Composition for covering steam-boilers, and for other purposes.....(Reissue).....	Aug. 3, 1870
109,636	Le Roy, Joseph, Marathon, N. Y. Fifth-wheel.....	Nov. 29, 1870
	Leseman, Ernest Henry, and William P. Walker. (See Walker & Leseman.)	
101,633	Lesh, Daniel, jr., Liverpool, Pa. Weighing-faucet.....	April 5, 1870
108,492	Leslie, Arthur M., Chicago, Ill. Ruffler for sewing-machines.....	Oct. 18, 1870
100,161	Leslie, Arthur M., assignor to self and Cornell, Ward & Comings, Chicago, Ill. Ruffling-attachment for sewing-machines.....	Feb. 22, 1870
103,755	Same.....same.....	May 31, 1870
4,107	Leslie, George M., assignor to self and Jesse Oakley, Northumberland, Pa. Apparatus for crutching soap.....(Reissue).....	Aug. 23, 1870
3,904	Leslie, Hugh, Jersey City, N. J. Steam-boiler.....(Reissue).....	April 5, 1870
4,359	Leslie, John W., South Paso, Ill. Berry-box.....(Design).....	Sept. 20, 1870
108,712	Leslie, William, Fort Madison, Iowa. Combined stalk and weed cutter and land-roller. (Antedated Oct. 15, 1870).....	Oct. 25, 1870
106,268	Lester, James S., Knoxville, Tenn. Device for operating windows.....	Aug. 9, 1870
98,834	Letchworth, G. J., Auburn, N. Y. Hames.....	Jan. 11, 1870
3,852	Letchworth, John, assignor to Hartell & Letchworth, Philadelphia, Pa. Shade for gas or lamp burners.....(Design).....	Feb. 15, 1870
3,853	Same.....Shade for gas or lamp burners.....(Design).....	Feb. 15, 1870
4,295	Same.....same.....(Design).....	Aug. 16, 1870
102,138	Letchworth, Josiah, Buffalo, N. Y. Hames for harness.....	April 19, 1870
4,202	Same.....Trace-supporting stud.....(Design).....	July 5, 1870
105,700	Same.....same.....	July 26, 1870
3,850	Letchworth, William P., Buffalo, N. Y. Machine for bending wood.....(Reissue).....	Feb. 22, 1870
102,838	Same.....Bridle-bit.....	May 10, 1870
	Letmate, Frederick W., and Lewis Francis. (See Francis & Letmate.) (Disclaimer.)	
104,968	Letort, James, Wytheville, Va. Churning-apparatus.....	July 5, 1870
	Letz, George F., and F. Baumann. (See Baumann & Letz.)	
98,604	Letz, John P., Lacon, Ill. Cultivator.....	Jan. 4, 1870
104,469	Leuchtweiss, August, Cincinnati, Ohio. Rotary pump.....	June 21, 1870
103,208	Leuffgen, Georg, Prussia. Tank-furnace for making glass.....	May 17, 1870
99,329	Levake, W. S., Cleveland, Ohio. Rolling-mill for rolling grooved-metal arches.....	Feb. 1, 1870
104,969	Same.....Tubular-arched bridge. (Antedated June 2, 1870).....	July 5, 1870
	Leventhorpe, Collett. (See Field, D. E., assignor.)	
104,325	Leverich, Gabriel, and Albert H. Emery, New York, N. Y. Concrete pavement. Same.....(See Emery & Leverich.)	June 14, 1870
99,330	Levy, Jacob, New York, N. Y. Bolt for doors.....	Feb. 1, 1870
100,777	Lewes, Michel, and John C. Swenson, Williamsburgh, N. Y. Fire-escape.....	Mar. 15, 1870
109,523	Lewin, Stephen, England. Elevator for raising and stacking straw.....	Nov. 22, 1870
107,269	Lewis, Andrew, Hastings, Minn. Harrow.....	Sept. 13, 1870
106,843	Lewis, Benjamin B., assignor to self and Welch, Spring & Co., Bristol, Conn. Clock-escapement.....	Aug. 30, 1870
107,511	Lewis, Clark, Cassville, N. Y. Locomotive-attachment.....	Sept. 20, 1870
99,213	Lewis, Elliot, Lockport, N. Y. Sad-iron heater.....	Jan. 25, 1870
107,512	Lewis, Fitch B., Tiffin, Ohio. Bolting-reel.....	Sept. 20, 1870
	Lewis, George. (See Wyatt, John, assignor.)	
	Lewis, George B., and John B. Merriman. (See Merriman & Lewis.)	
	Lewis, George T. (See Balmain, William Henry, assignor.)	
105,097	Lewis, James, Marengo, Mich. Top-rest for carriages.....	July 5, 1870
103,898	Lewis, John S., Elkport, Iowa. Churn.....	June 7, 1870
105,225	Lewis, Jonathan, Washington, D. C. Cultivator.....	July 12, 1870
109,432	Lewis, Jonathan, Washington County, D. C. Cultivator and seeder combined.....	Nov. 22, 1870
109,227	Lewis, Joseph H., assignor to Alfred R. Field, Providence, R. I. Machine for attaching studs or tubular-shaunked buttons to fabrics. (Antedated Nov. 5, 1870).....	Nov. 15, 1870
98,507	Lewis, Joshua O., Worcester, Mass. Card-clothing clamp.....	Jan. 4, 1870
108,606	Lewis, Oscar P., Cincinnati, Ohio. Method of cooling beer-worts, &c.....	Oct. 25, 1870
109,524	Lewis, Richard S., assignor to Jonathan H. Lewis, Rockville, Conn. Concrete composition for walks, flooring, &c.....	Nov. 22, 1870
101,746	Lewis, Samuel, Williamsburgh, N. Y. Rock-drill.....	April 12, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,899	Lewis, Samuel, Williamsburgh, N. Y. Submarine-drilling apparatus.....	June 7, 1879
108,160	Same.....Mat.....	Oct. 11, 1870
	Lewis, Samuel G., administrator. (See Pusey, Lea).....(Extension.)	
	Lewis, William, Brooklyn, N. Y., and William H., New York, N. Y. Plate-holder for photographic cameras.....(Extension.)	Sept. 24, 1870
100,646	Lewis, William A., Joliet, Ill. Carriage-axle.....	Mar. 8, 1870
108,607	Same.....Wagon-axle.....	Oct. 25, 1870
108,608	Same.....same.....	Oct. 25, 1870
108,609	Same.....same.....	Oct. 25, 1870
99,214	Lewis, William H., assignor to Richard A. Lewis, New York, N. Y. Device for destroying insects. (Antedated Jan. 21, 1870).....	Jan. 25, 1870
107,929	Lewis, William J., Pittsburgh, Pa. Hammer-strap.....	Oct. 4, 1870
107,930	Same.....Rack for wagon-brakes.....	Oct. 4, 1870
107,931	Same.....Blank for hammer-straps for wagons.....	Oct. 4, 1870
108,493	Lewis, William J., and Henry W. Oliver, jr., Pittsburgh, Pa. Strap-bolt for wagon-beds.....	Oct. 18, 1870
98,780	Lewis, W. M., New York, N. Y. Sheet-metal can.....	Jan. 11, 1870
106,269	Lewis, William P., and Silas L. Vera, Pittsburgh, Pa. Stove-pipe.....	Aug. 9, 1870
	Lewiston Machine Company. (See Abbott, Levi, assignor.)	
103,209	Lewthwaite, John, England. Coating fabrics with parkesine. (Patented in England March 4, 1868).....	May 17, 1870
104,608	Leyburn, Edward J., Lexington, Va. Motive power for sewing-machines.....	June 21, 1870
	Leyburn, William C., et al. (See Walker, Albert A., assignor.)	
	Libby, Nelson F., et al. (See Stimson, L. S., assignor.)	
	Libby, Samuel D., and Joseph G. Knapp. (See Knapp & Libby.)	
102,285	Lichtenstadt, David, and Rafael Pentlarge, New York, N. Y. Bung.....	April 26, 1870
109,525	Lichtenstein, Joseph, assignor to self, Charles F. Smith, and William H. Peirce, Baltimore, Md. Car-axle lubricator.....	Nov. 22, 1870
102,839	Lidren, Christopher, assignor to self and R. Jackson, La Fayette, Ind. Plat-form for harvesters.....	May 10, 1870
107,793	Lieb, Gottlob, Coeymans Hollow, N. Y. Washing-machine.....	Sept. 27, 1870
101,891	Liebenau, T. Graham, and Alfred G. Haney, Plainville, Conn. Enamel for clock-dials.....	April 12, 1870
4,170	Liebrich, Conrad, deceased, by Samuel Croft and John C. Schuellermann, executors, Philadelphia, Pa. Hasp for trunk-locks.....(Reissue.)	Nov. 1, 1870
106,180	Liedke, Charles, Sandusky, Ohio. Pressure-gauge.....	Aug. 9, 1870
106,067	Liesche, August, Syracuse, N. Y. Combined chair and step-ladder.....	Aug. 2, 1870
	Light, Joseph F., et al. (See Taft, Timothy F., assignor.)	
101,282	Lightfoot, John S., deceased, by William Lightfoot, administrator, Hamilton County, Tenn. Current-water wheel.....	Mar. 29, 1870
102,840	Lighthall, Almerin H., Albany, N. Y. Railway-car brake.....	May 10, 1870
101,892	Lighthall, Reuben, Brooklyn, N. Y. Surface-condenser.....	April 12, 1870
107,390	Same.....Washing-machine.....	Sept. 13, 1870
4,048	Lighthall, Reuben, assignor to self and Cornelius Godfrey, Brooklyn, N. Y. Preventing the corrosion of iron exposed to water or dampness.....(Reissue.)	June 28, 1870
	Lighthall, Reuben, and Cornelius Godfrey. (See Godfrey & Lighthall.)	
105,817	Lighthall, William A., New York, N. Y. Pipe-coupling.....	July 26, 1870
	Ligier, Joseph Z. (See Shellaberger, Amos, assignor.)	
103,348	Ligon, Edwin T., Demopolis, Ala. Lock-nut.....	May 24, 1870
105,098	Same.....Propelling-apparatus.....	July 5, 1870
102,560	Lilienthal, Christian H., Yonkers, N. Y. Machine for granulating tobacco.....	May 3, 1870
109,637	Same.....Pier for bridges.....	Nov. 29, 1870
108,494	Lillie, Lewis, Clinton, N. J. Iron safe.....	Oct. 18, 1870
104,170	Liming, John, Philadelphia, Pa. Hobby-horse.....	June 14, 1870
105,701	Same.....Combined hobby-horse and carriage-motor.....	July 26, 1870
109,914	Linberg, Charles J., and William J. Phillips, St. Louis, Mo. Revolving fire-arm.....	Dec. 6, 1870
	Lincoln, George S. and Charles L. (See Weaver, Horatio B., assignor.)	
105,957	Lincoln, George T., Providence, R. I. Round comb.....	Aug. 2, 1870
	Lincoln, Joseph, jr. (See Bacon, Robert, assignor.)	
104,748	Lincoln, Luther, Norton, Mass. Flat or sad iron. (Antedated June 9, 1870).....	June 28, 1870
	Lincoln, William Stillwell, and William Anderson Rayer. (See Rayer & Lincoln.)	
4,380	Lindemann, Otto, New York, N. Y. Lid of a feed-cup in bird-cages.....(Design)	Oct. 4, 1870
109,228	Linden, Nicholas, Chicago, Ill. Coffee-roaster.....	Nov. 15, 1870
99,577	Linder, Joseph, Seneca Falls, N. Y. Key.....	Feb. 8, 1870
104,749	Same.....Door-lock.....	June 28, 1870
107,695	Linderman, James, Bullville, N. Y. Hay-elevator.....	Sept. 27, 1870
104,171	Lindhorst, H. Henry, St. Louis, Mo. Carpet-cleaning machine.....	June 14, 1870
98,983	Lindley, N. H., Bridgeport, Conn. Horse-hoe.....	Jan. 18, 1870
109,028	Same.....Well-boring apparatus.....	Nov. 8, 1870
107,391	Lindsay, Charles M., Foreston, Ill. Screw-clamp for piano-pias.....	Sept. 13, 1870
100,299	Lindsey, L. A., Jackson, Miss. Folding-crate.....	Mar. 1, 1870
102,561	Lindsey, Landy Tunstall, Jackson, Tenn. Printing-telegraph instrument.....	May 3, 1870
102,562	Same.....Electro-magnetic motor.....	May 3, 1870
106,493	Same.....same.....	Aug. 16, 1870
107,932	Lindsey, Peter H., Lockport, N. Y. Meat and vegetable slicer.....	Oct. 4, 1870
	Lindsley, Isaac, and Olney Arnold. (See Arnold & Lindsley.)	
104,172	Lindsley, William D., Eudora, Kans. Animal-trap.....	June 14, 1870
103,477	Link, Joseph, United States Army. Projectile.....	May 21, 1870
	Link, Joseph, and Lionel V. Percival. (See Percival & Link.)	
	Linnell, Joseph D., and John J. Tofflemire. (See Tofflemire & Linnell.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,915	Linscott, Charles F., Chicago, Ill. Miter-box .....	Dec. 6, 1870
103,629	Lintner, John, Indianapolis, Ind. Fastening for gates .....	May 31, 1870
	Linville, George W. ( <i>See Follansbee, Lambert T., assignor.</i> ) .....	
100,421	Lipp, Francis X., Baltimore, Md. Ash-sifter .....	Mar. 1, 1870
	Lippiatt, Maltby & Morse. ( <i>See Lathrop, John D., assignor.</i> ) .....	
	Lippiatt Silver-Plate and Engraving Company. ( <i>See Rogers, John, assignor.</i> ) .....	
102,950	Lippiatt, Thomas, Orange, N. J. Machine for engraving and chasing articles of metal .....	May 10, 1870
	Lippincott, Edward, and George L. Sullivan. ( <i>See Sullivan &amp; Lippincott.</i> ) .....	
	Lippincott, John. ( <i>See Grey, John D., assignor.</i> ) .....	
98,698	Lipsev, Andrew B., New York, N. Y. Wrench .....	Jan. 11, 1870
99,095	Lishawa, George W., Cincinnati, Ohio. Blacking-brush .....	Jan. 23, 1870
	List, Carl, and Daniel Kaempfe. ( <i>See Kaempfe &amp; List.</i> ) .....	
107,184	Lister, Alfred and Edwin, Newark, N. J. Mill for grinding bones .....	Sept. 6, 1870
109,638	Lister, Alfred and Edwin, and Charles J. Eames, Newark, N. J. Deodorizing the air and gases in fat-rendering, bone-boiling, &c. ....	Nov. 29, 1870
103,630	Liston, Robert, Albany, N. Y. Hawse-hole cover .....	May 31, 1870
103,210	Litbgow, Charles H., Chicago, Ill. Knife-polisher .....	May 17, 1870
105,702	Littel, William H., Prairie-du-Chien, Wis. Corn-planter .....	July 26, 1870
4,152	Little, Andrew, New York, N. Y. Printing-type .....	June 14, 1870
4,203	Same.....Type .....	July 5, 1870
103,349	Little, Benjamin, and John B. Lundberg, Coffee Creek, Ind. Sawing-machine .....	May 24, 1870
99,921	Little, Cyrus, Van Wert, Ohio. Road-scraper .....	Feb. 15, 1870
103,495	Little, George, Rutherford Park, N. J. Arrangement of electrical circuits for automatic transmitting-instruments .....	Oct. 18, 1870
108,496	Same.....Chemical telegraph .....	Oct. 18, 1870
107,069	Little, James R., Galesburgh, Ill. Cultivator .....	Sept. 6, 1870
108,037	Same.....same .....	Oct. 4, 1870
	Little, Joel L., et al. ( <i>See Doty, Little &amp; Schmidler.</i> ) .....	
98,984	Little, Michael, Ashley, Ill. Fly-trap .....	Jan. 18, 1870
101,141	Little, Sherrod S., and Henry P. Westcott, assignors to Smith, Westcott & Co., Macon, Ga. Harness-fastening .....	Mar. 22, 1870
	Little, William S., and John K. Odell. ( <i>See Odell &amp; Little.</i> ) .....	
101,476	Littlefield, Dennis G., Albany, N. Y., and Grove H. Johnson, Erie, Pa. Base-burning stove .....	April 5, 1870
4,062	Littlefield, Dennis G., Albany, N. Y. Stove-door .....	May 24, 1870
4,006	Same.....Cover for stoves .....	May 31, 1870
100,908	Littlefield, Horace, Lewis, Iowa. Fanning and smut mill .....	Mar. 15, 1870
101,477	Littlefield, J. A., Randolph, Mass. Combined square, protractor, level, &c. ....	April 5, 1870
103,900	Littlejohn, Lomax, New York, N. Y. Carriage-axle .....	June 7, 1870
102,286	Littlepage, Caleb V., Austin, Texas. Saw .....	April 26, 1870
103,061	Same.....Electric foot-warmer .....	May 17, 1870
103,631	Same.....Head-rest .....	May 31, 1870
105,345	Same.....Saw-teeth .....	July 12, 1870
108,368	Living, Francis, assignor to self and Peter Wycoff, East Enterprise, Ind. Gate .....	Oct. 18, 1870
103,756	Livingstone, William, assignor to John Roach, New York, N. Y. Steam-pump .....	May 31, 1870
110,252	Livsey, Thomas Lewis, Great Britain. Machine for filling or starching woven fabrics .....	Dec. 20, 1870
108,801	Llewellyn, Thomas, England. Planing-machine .....	Nov. 1, 1870
	Lloyd, Clinton. ( <i>See Delany, Thomas J., assignor.</i> ) .....	
107,070	Lloyd, George A., San Francisco, Cal. Fruit-carrying box .....	Sept. 6, 1870
101,370	Lloyd, George A., assignor to self and Anthony Rosenfield, San Francisco, Cal. Carriage-axle .....	Mar. 22, 1870
110,480	Lloyd, George A., assignor to self, George W. Smiley, James McMechan, and Anthony Rosenfield, San Francisco, Cal. Needle and its carrying-arm for sewing-machines .....	Dec. 27, 1870
103,901	Loader, John, assignor to self, William Henry Child, and Aaron White Cook Williams, England. Packing for rotary engines .....	June 7, 1870
103,902	Loader, John, and William Henry Child, assignors of one-third interest to Aaron White Cook Williams, England. Steam-generator .....	June 7, 1870
110,378	Lobdell, George G., and William Stuart, Wilmington, Del. Casting chilled rolls .....	Dec. 20, 1870
	Lobdell, George Granville, and Alexander McLeod. ( <i>See McLeod &amp; Lobdell.</i> ) .....	
99,449	Lobdell, James E., and Leroy H. Smith, Centro Lisle, N. Y. Hay-fork .....	Feb. 1, 1870
106,703	Locher, Conrad, Oroville, Cal. Baling-press .....	Aug. 23, 1870
110,253	Locher, Conrad, assignor to self and George C. Perkins, Oroville, Cal. Hose-coupling .....	Dec. 20, 1870
93,781	Lock, N. C., Salem, Mass. Gun-lock .....	Jan. 11, 1870
109,526	Same.....Water-pressure regulator .....	Nov. 22, 1870
106,378	Locke, Aaron R., Boston, Mass. Railway-carriage .....	Aug. 16, 1870
107,513	Locke, Harvey, Grand Rapids, Mich. Turning-lathe .....	Sept. 20, 1870
103,632	Locke, Henry H., Pleasantville, Pa. Pump-rod attachment .....	May 31, 1870
106,945	Locke, Sylvanus D., Janesville, Wis. Machine for cutting and binding grain .....	Aug. 30, 1870
	Lockey, Joseph P., and Greenleaf L. Swett. ( <i>See Swett &amp; Lockey.</i> ) .....	
100,422	Lockhart, Miles, Isle of Man. Chimney-cowl .....	Mar. 1, 1870
	Lockie, John. ( <i>See Johnston, James J., assignor.</i> ) .....	
99,450	Lockie, Peter, Rochester, N. Y. Washing-machine .....	Feb. 1, 1870
103,903	Lockling, Lewis E., Perrysburgh, N. Y., and Nathaniel N. Whitaker, Sheridan, N. Y. Fence .....	June 7, 1870
101,173	Lockwood, Charles, Haverstraw, N. Y. Screen .....	June 14, 1870
99,215	Lockwood, H. C., Baltimore, Md. Coffee cleaner and polisher .....	Jan. 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,703	Lockwood, Wilber C., Spring Mills, Mich. Corn and seed planter.....	July 26, 1870
	Löffelholz, Adam, and Anton Prier, Milwaukee, Wis. Car-seat lock.....	Dec. 20, 1870
101,283	Loew, Oscar, assignor to John M. Pendleton, New York, N. Y. Bleaching dark soaps and foots.....	Mar. 29, 1870
101,284	Same.....Method of bleaching and refining oil.....	Mar. 29, 1870
104,470	Same.....Bluing dark soaps and foots.....	June 21, 1870
107,071	Loew, Oscar, assignor to Reuben D. Turner and Wellwood Murray, New York, N. Y. Process of obtaining ozone or ozonized air.....	Sept. 6, 1870
104,862	Loewenberg, Henry, New York, N. Y. Compound for printers' ink.....	June 28, 1870
106,068	Same.....Manufacture of imitation-braids, trimmings, &c.....	Aug. 2, 1870
101,142	Loewenberg, Henry, assignor to Medina Hat Company, New York, N. Y. Dio for the manufacture of imitation straw-goods.....	Mar. 22, 1870
108,363	Loewenstein, Joseph M., New Orleans, La. Fertilizing compound.....	Oct. 18, 1870
109,327	Loftus, Robert G., assignor to self and Oliver W. Farrar, Chelsea, Mass. Ink for writing.....	Nov. 15, 1870
103,757	Lofvendahl, Joseph, assignor to self and Simeon S. Cook, Woonsocket, R. I. Shuttle for looms.....	May 31, 1870
103,211	Logan, James M., Springfield, Ill. Mill-spindle driver.....	May 17, 1870
105,467	Logan, John, Boston, Mass. Hair-spring testing-apparatus for watches.....	July 19, 1870
108,917	Logan, John, Waterloo, Iowa. Sleigh-runner.....	Nov. 1, 1870
110,052	Logan, John, and Daniel W. Eldredge, Boston, Mass. Cartridge-cap extractor.....	Dec. 13, 1870
98,782	Logan, John F., Coal Bluffs, Pa. Car-loading device.....	Jan. 11, 1870
101,285	Logee, Edgar L., Central Falls, R. I. Window-guard against flies and mosquitos.....	Mar. 29, 1870
	Logee, Suel, and Charles Bean. (See Bean & Logee.)	
	Loiseau, Desire, and Jules Emile Boivin. (See Boivin & Loiseau.)	
104,471	Loiseau, Emile F., and Charles F. Requin, Nashville, Tenn. Artificial fuel....	June 21, 1870
100,648	Lomas, John R., New Haven, Conn. Tremolo for organs.....	Feb. 22, 1870
107,514	Lomax, George Henry, Somerville, Mass. Lamp.....	Sept. 20, 1870
108,370	Lombard, George W., Westminster, Mass. Sawing-machine.....	Oct. 18, 1870
	Lombard, William. (See Durran, John H., assignor.)	
104,326	Long, Charles B., assignor to self and Jonathan Luther, Worcester, Mass. Steam and gas pipe hook.....	June 14, 1870
	Long, Charles L., et al. (See Maxwell, Neal & Long).....(Design.)	
98,783	Long, Charles R., Louisville, Ky. Chair.....	Jan. 11, 1870
110,053	Same.....same.....	Dec. 13, 1870
99,044	Long, Daniel, and John Preston, Fairview, Pa. Let-off mechanism for looms....	Jan. 18, 1870
103,758	Long, David W., Parkersburgh, W. Va. Hinge.....	May 31, 1870
	Long, Dennis. (See Jones, Thomas L., assignor.)	
	Long, Eli W., and Isaac N. Patten. (See Patten & Long.)	
101,747	Long, G. E., Harrisburgh, Pa. Steam-engine.....	April 12, 1870
103,904	Same.....Variable cut-off valve-gear.....	June 7, 1870
103,212	Long, H. E., Decatur, Ill. Steam-engine.....	May 17, 1870
	Long, John M., et al. (See Patton, Samuel, assignor.)	
	Long, Joseph and Carter. (See Staley, Franklin J., assignor.)	
99,331	Long, William H., Eddyville, Iowa. Horse hay-rake.....	Feb. 1, 1870
100,778	Longaker, Thomas F., Philadelphia, Pa. Machine for cleaning stables.....	Mar. 15, 1870
106,181	Same.....Stable-cleaner.....	Aug. 9, 1870
105,704	Longwell, Peter, Poplar, Ohio. Cross-cut saw.....	July 23, 1870
104,472	Loomis, Charles H., New Philadelphia, Ohio. Adjustable school-desk.....	June 21, 1870
4,190	Same.....School-desk.....(Reissue).....	Nov. 29, 1870
101,027	Loomis, George W., Hartford, Conn. Spring bed-bottom.....	Mar. 22, 1870
102,019	Loomis, James Alanson, Carthage, Ill., and Charles Friedrich Moll, San Fran- cisco, Cal. Dental apparatus for casting plates for artificial teeth.....	April 19, 1870
98,605	Loomis, S. P., Philadelphia, Pa. Window-jack.....	Jan. 4, 1870
102,411	Lord, James H., San Francisco, Cal. Animal-trap.....	April 26, 1870
105,818	Same.....Faucet.....	July 26, 1870
109,328	Lord, Joseph A., jr., Middletown, Conn. Detaching-hook.....	Nov. 15, 1870
99,922	Lord, Samuel L., Sarry, Me. Boat-detaching apparatus.....	Feb. 15, 1870
106,069	Lord, William, San Francisco, Cal. Spring for beds, sofas, &c.....	Aug. 2, 1870
100,166	Lord, W. Stinson, Crawford, Miss. Punch and press.....	Feb. 22, 1870
107,185	Lordon, Daniel, assignor to self and James Shields, Memphis, Tenn. Feed-water heater for steam-boilers.....	Sept. 6, 1870
98,873	Lore, George W., Dexter, Mich. Stove-pipe drum.....	Jan. 18, 1870
	Lorillard, Peter. (See Spencer, Lewis W., assignor).....(Two cases.)	
103,633	Loring, Thomas, Blackwoodtown, N. J. Harvester-knife grinder.....	May 31, 1870
105,099	Lorton, Nicholas, and John S. Davison, Cranberry, N. J. Paper-bag machine....	July 5, 1870
	Losie, Thomas, and G. W. Corey. (See Corey & Losie.)	
107,933	Lottridge, William, Charles City, Iowa. Grain-binder.....	Oct. 4, 1870
	Lotz, William H. (See Marki, Johan Jakob, assignor).....(Two cases.)	
107,696	Lotze, Adolphus, Cincinnati, Ohio. Heating-stove.....	Sept. 27, 1870
	Loucks, Peter, and Samuel Becker. (See Becker & Loucks.)	
102,747	Loud, A. C., San Francisco, Cal. Propelling-wheel.....	May 3, 1870
106,704	Loud, Alfred C., assignor to self and W. J. Miller, San Francisco, Cal. Bucket for paddle-wheels.....	Aug. 23, 1870
100,536	Loud, Erastus C., Springfield, Mass. Stove-grate.....	Mar. 8, 1870
	Loud, E. C., and Franklin Rowell. (See Rowell & Loud.)	
	Louis, La Fayette, deceased, by El Dora Louis, administratrix, New York, N. Y. Melodeon.....(Extension).....	Dec. 3, 1870
	Loutrel, Cyrus H., and Lewis Francis. (See Francis & Letmate, assignors). (Dis- claimer.)	

*Alphabetical list of patentees for the year 1870—Continued*

No.	Name, residence, and invention or discovery.	Date.
99,688	Love, John C., Philadelphia, Pa. Vapor-burner.....	Feb. 8, 1870
99,689	Same.....same.....	Feb. 8, 1870
105,819	Same.....Vapor gas-burner.....	July 26, 1870
108,371	Love, John D., Harrisburgh, Oreg. Medical compound or liniment.....	Oct. 18, 1870
109,433	Love, Milton, Corry, Pa. Machine for threading bolts.....	Nov. 22, 1870
109,434	Same.....Chuck.....	Nov. 22, 1870
99,332	Love, Robert, New York, N. Y. Composition for paint.....	Feb. 1, 1870
103,905	Love, Roger W., Windsor, Vt. Locomotive head-light.....	June 7, 1870
100,423	Lovell, G. W. C., Clarksville, Tenn. Smoothing-iron.....	Mar. 1, 1870
98,508	Lovejoy, John S., Washington, D. C. Curtain-fixture.....	Jan. 4, 1870
	Loveridge, Sears M. (See Godfrey, Joseph S., assignor).....(Two cases.)	
98,509	Lovering, William C., Taunton, Mass. Tea-kettle cover.....	Jan. 4, 1870
	Same.....(See Dean, Ephraim K., assignor.)	
	Low, Caleb, and John Harrison. (See Harrison & Low.)	
100,162	Low, G. W., Ravenna, Ohio. Pump.....	Feb. 22, 1870
109,229	Low, Isaac, assignor to self and Ephraim Phillips, East Fairfield, Ohio. Cultivator.....	Nov. 15, 1870
99,923	Low, Joseph M., Portlandville, N. Y. Rake and toddler combined.....	Feb. 15, 1870
4,183	Low, Peter, Cleveland, Ohio. Cooking-stove.....(Design.)	June 28, 1870
99,451	Low, William R., and Augustus Adams, Sandwich, Ill. Harvester.....	Feb. 1, 1870
	Lowe, Charles A. (See Howell, David, assignor.)	
	Lowe, David H., and Thomas Simmons. (See Simmons & Lowe.)	
109,029	Lowe, James F., Louisville, Ky. Double and single tree attachment for street-cars.....	Nov. 8, 1870
3,896	Lowe, John K., assignor to Valentine Wood, J. E. Suiterlin, and George W. Wood, Cleveland, Ohio. Inking-apparatus for printing-presses....(Reissue)	Mar. 22, 1870
99,096	Lowe, R. E., Upper Alton, Ill. Velocipede. (Antedated Jan. 9, 1870)	Jan. 25, 1870
4,000	Lowe, William, Bridgeport, Conn. Steam-generator.....(Reissue)	May 31, 1870
	Lowell Manufacturing Company. (See Campbell, Robert R., assignor)....(Nineteen cases).....(Design.)	
	Same.....(See Ney, Elemir J., assignor). (Twenty-three cases).....(Design.)	
109,230	Lowen, George, and Samuel H. Goldthorp, Pittsburgh, Pa. Dry gas-meter.....	Nov. 15, 1870
	Löwenberg, Henry. (See Werrkmeister, A., assignor.)	
100,424	Lowry, Thomas, Pittsburgh, Pa. Kiln for annealing glass.....	Mar. 1, 1870
100,537	Loy, G. W., Naacogdoches, Texas. Mill-stone dress.....	Mar. 8, 1870
108,713	Lucas, John, Philadelphia, Pa. Apparatus for preparing lakes and colors.....	Oct. 25, 1870
108,271	Lucas, Joseph L., Saratoga Springs, N. Y. Manufacture of blacking.....	Oct. 11, 1870
102,412	Lucas, Robert A., assignor to self and Horace S. Weston, Wooster, Ohio. Eaves-trough hanger.....	April 26, 1870
105,100	Luce, James R., Stevens Point, Wis. Circular-saw mill.....	July 5, 1870
	Luce, Thomas B., and Truman M. Annis. (See Annis & Luce.)	
100,425	Luckett, Samuel B., Corydon, Ind. Cloth-measuring apparatus.....	Mar. 1, 1870
109,916	Lucus, Samuel D., Winterpock, Va. Combined hand seed-drill and cultivator.....	Dec. 6, 1870
109,917	Ludde, Elard, New York, N. Y. Putting up pomatum.....	Dec. -6, 1870
	Luddington, James H., and Isaac N. Forrester. (See Forrester & Luddington.) (Reissue.)	
110,379	Ludlam, John C., Brooklyn, N. Y. Cartridge-box.....	Dec. 20, 1870
107,208	Ludlow, Henry G., Troy, N. Y. Apparatus for the manufacture of illuminating-gas.....	Sept. 6, 1870
108,714	Ludlow, Henry G., Troy, and Jabez Stone, Waterford, N. Y., assignors to Henry G. Ludlow. Stop-valve.....	Oct. 25, 1870
103,213	Ludlow, William D., New York, N. Y. Lamp-burner.....	May 10, 1870
	Ludlow, William D., et al. (See Browne, A. W., assignor.)	
100,300	Ludlum, M., Williston, Vt. Flower-pot.....	Mar. 1, 1870
102,287	Ludwig, John C., Stockton, Cal. Steam-generator.....	April 26, 1870
	Ludwig, Julius. (See Smith, James E., assignor.)	
	Ludwig, Walter K. (See Kelly, Daniel, assignor.)	
109,329	Luey, Ira O., Bernardstown, Mass. Shutter-fastener.....	Nov. 15, 1870
102,288	Luffberry, John H., Rahway, N. J. Rossing-machine.....	April 26, 1870
107,392	Luffbarry, Andrew Jackson, jr., Philadelphia, Pa. Outtrigger for row-boats.....	Sept. 13, 1870
99,452	Lugo, Orazio, Baltimore, Md. Fertilizer or fish-guano.....	Feb. 1, 1870
99,924	Same.....Manufacture of fertilizers, and extracting oils and fats.....	Feb. 15, 1870
3,840	Same.....Manufacture of fertilizers or guano from fish.....(Reissue)	Feb. 15, 1870
100,163	Same.....Manufacture of fertilizers from animal substances.....	Feb. 22, 1870
100,647	Same.....Treating liquors containing gelatine or glue.....	Mar. 8, 1870
102,689	Same.....Manufacture of fertilizers and oil from fish.....	May 3, 1870
104,327	Same.....Manufacture of fertilizers from fish, &c.....	June 14, 1870
	Lugo, Orazio, et al. (See Hooper, Hooper & Lugo.)	
	Lugo, Orazio, and David K. Tuttle. (See Tuttle & Lugo.)	
103,634	Lull, Orrin, Rochester, N. Y. Friction-clutch.....	May 31, 1870
	Lumb, William. (See Gould, Charles H., assignor.)	
	Lumbard, H. G. (See Bonnell, Isaac, jr., assignor.)	
108,161	Lumbard, William G., Georgetown, Ill. Feather-renovator.....	Oct. 11, 1870
	Lumsden, William C., et al. (See Tappey, Lumsden & Steel.)	
107,186	Lumsdon, Thomas, Waterford, Ohio. Combined adjustable cultivator and grain-drill.....	Sept. 6, 1870
	Lundberg, John B., and Benjamin Little. (See Little & Lundberg.)	
106,070	Lundgren, John, New York, N. Y. Gas-heater.....	Aug. 2, 1870
	Lungstras, Eugene. (See Englander, Joseph, assignor).....(Two cases.)	
108,272	Luppen, Luppe, Pekin, Ill. Shovel-plow.....	Oct. 11, 1870
108,273	Same.....same.....	Oct. 11, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,274	Luppen, Luppe, Pekin, Ill. Shovel-plow.....	Oct. 11, 1870
103,275	Same..... same.....	Oct. 11, 1870
103,276	Same..... same.....	Oct. 11, 1870
110,054	Lupton, George, Indianapolis, Ind. Purifying benzine.....	Dec. 13, 1870
110,055	Same..... Lamp-burner. (Antedated Nov. 26, 1870).....	Dec. 13, 1870
105,958	Lusher, John, La Porte, Ind. Vegetable-cutter.....	Aug. 2, 1870
	Lusk, Andrew P., <i>et al.</i> (See Reinshagen, Peter W., assignor.)	
	Same..... (See Wichl, Daniel, assignor.)	
104,609	Lusk, Salmon B. (See Mallory, Orson E., assignor.)	
	Luther, Henry C., Providence, R. I., and Celius E. Richards, North Attlebor- ough, Mass. Picture-knob.....	June 21, 1870
	Luther, Jonathan. (See Burns, W. H., assignor.)..... (Three cases.)	
	Same..... (See Long, Charles B., assignor.)	
104,970	Luther, Justus P., and Solon K. Buck, Berlin, Wis. Clamp for making whips...	July 5, 1870
99,780	Luther, L. T., Oak Grove, Pa. Match-machine.....	Feb. 15, 1870
102,413	Luther, Ormel R., Waterbury, Conn. Adjustable foot for clock-cases.....	April 26, 1870
100,049	Lutz, Georg, John Schultheis, and Michel Florentin, Newark, N. J. Vegetable- cutter.....	Feb. 22, 1870
102,563	Lutz, George, Danforth H. Royce, Michael Trenor, and Robert Chadwick, Co- lumbus, Ohio. Policeman's nippers.....	May 3, 1870
103,918	Lutz, John A., Waynesborough, Va. Cotton-chopper.....	Nov. 1, 1870
	Lutz, Joseph F. C., and John W. Pearman. (See Pearman & Lutz.)	
102,952	Lutz, Stimmel, Philadelphia, Pa. Fruit-can.....	May 10, 1870
101,478	Luxton, Charles, Hudson City, N. J. Peat-machine.....	April 5, 1870
	Lyman, Azel S., New York, N. Y. Method of cooling and ventilating rooms, &c..... (Extension).....	Mar. 24, 1870
103,478	Lyman, Chester C., Edinborough, Pa. Platform-scale.....	May 24, 1870
3,799	Lyman, John N., New York, N. Y. Stay-log for cutting veneers.... (Reissue).....	Jan. 18, 1870
100,164	Same..... Clamp for stay-logs.....	Feb. 22, 1870
100,774	Lyman, Myron W., Chicago, Ill. Animal-trap.....	Mar. 15, 1870
102,951	Lyman, William W., Meriden, Conn. Apparatus for preserving fruit.....	May 10, 1870
105,346	Same..... Can-opener.....	July 12, 1870
105,583	Same..... West Meriden, Conn. Can-opener.....	July 19, 1870
108,802	Lynch, Charles S., Boston, Mass. "Fix" for puddling-furnaces.....	Nov. 1, 1870
108,277	Lynch, George F., Milwaukee, Wis. Railway-car axle-box.....	Oct. 11, 1870
	Lynch, J. Augustus. (See Huntoon, Reuben K., assignor.)	
105,101	Lynch, John H., New York, N. Y. Ice-chamber for refrigerators.....	July 5, 1870
99,578	Lynch, Matthew, New York, N. Y. Hoisting-machine.....	Feb. 8, 1870
101,634	Lynch, Nathaniel K., New York, N. Y. Variable cut-off valve-gear.....	April 5, 1870
102,690	Lynch, Stephen, New York, N. Y. Pipe-tongs.....	May 3, 1870
	Lynch, William A. (See Wagner, Franz, assignor.)	
99,606	Lynd, William John, Golden City, Col. Ter. Process of preparing coal for smelting ores.....	Jan. 4, 1870
99,607	Same..... Using Colorado and similar coal for metallurgical operations.....	Jan. 4, 1870
103,062	Lynde, John D., Philadelphia, Pa. Safety-valve. (Antedated May 2, 1870).....	May 17, 1870
4,049	Same..... Water-indicator for boilers..... (Reissue).....	June 28, 1870
108,162	Same..... Governor for steam-engines.....	Oct. 11, 1870
	Lyne, H. A. (See Kniffen, Oscar P., assignor.)	
	Lynn, George L. (See Potter, Joseph, assignor.)	
	Lynn, Isaac V., <i>et al.</i> (See Snowdon, Snowdon & Lynn.)	
103,635	Lynn, Mirabeau N., New Albany, Ind. Steam-plow.....	May 31, 1870
107,934	Same..... Water-indicator, and alarm.....	Oct. 4, 1870
104,473	Lyon, Baxter, and Charles M. Curtis, Springfield, Mass. Head-rest.....	June 21, 1870
101,748	Lyon, C. E., Worcester, Mass. Lamp.....	April 12, 1870
104,971	Lyon, George R., Waterbury, Conn. Lamp-burner.....	July 5, 1870
	Lyon, G. W., <i>et al.</i> (See Clark, L. S., assignor.)	
110,056	Lyon, James B., Pittsburgh, Pa. Mold for making glassware.....	Dec. 13, 1870
101,893	Lyon, James Hammond, Pittsburgh, Pa. Portable furnace.....	April 12, 1870
98,985	Lyon, James M., Watertown, N. Y. Braiding-attachment for sewing-machines.....	Jan. 18, 1870
102,691	Lyon, James W., assignor to self and John Fellows, Brooklyn, N. Y. Shade- holder for lamps.....	May 3, 1870
105,820	Lyon, Lucius, New York, N. Y. Shuttle for sewing-machines.....	July 26, 1870
101,030	Lyon, Virgil H., assignor to self and Jesse L. Snipes, Plainfield, Ind. Dumping- wagon.....	Mar. 22, 1870
100,165	Lyons, James B., Milton, Conn. Stone and stump extractor.....	Feb. 22, 1870
100,301	Same..... Floor for drying peat.....	Mar. 1, 1870
100,302	Same..... Peat-machine.....	Mar. 1, 1870
101,479	Same..... Machine for scouring and burnishing metals.....	April 5, 1870
110,149	Same..... Cotton-renovating machine.....	Dec. 13, 1870
102,414	Lyons, James B., assignor to Vulcan Peat-Manufacturing Company, New Haven, Conn. Peat-machine.....	April 26, 1870
103,759	Lytch, James, Laurinburg, N. C. Cotton-seed planter.....	May 31, 1870
104,396	Same..... Cotton-scraper.....	June 14, 1870
109,527	Same..... Cider-mill.....	Nov. 22, 1870
102,841	Mabbett, Truman, sr., Vineland, N. J. Cultivator.....	May 10, 1870
	Macardle, George, and Louis Frey. (See Frey & Macardle.)	
100,909	Macaulay, T. A., Northampton, Mass. Needle-adjusting block for sewing- machines.....	Mar. 15, 1870
109,828	Same..... Sewing-machine.....	Dec. 6, 1870
107,697	Macdonald, John C., St. Louis, Mo. Valve-cock.....	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Macfarlane, J. D., <i>et al.</i> (See Brockenshire, John, assignor) (Two cases.) (Re-issue.)	
	Macferran, Samuel. (See Omensetter, Elhanan, assignor.) (Eight cases.) (Design.)	
110,255 4,184	Macferran, Samuel, Philadelphia, Pa. Tightening-strap for barrels. . . . .	Dec. 20, 1870
	Macferran, Samuel and Elhanan Omensetter, assignors to Samuel Macferran, Philadelphia, Pa. Gate. . . . . (Design) ..	June 23, 1870
101,286	MacGrove, William, and George M. Wyne. (See Wyne & MacGrove.)	
109,829	Mack, Ed. Elisha, Albany, N. Y. Paper collar. . . . .	Mar. 29, 1870
100,167	Mack, William B., assignor to Divie Bethune Duffield, Detroit, Mich. Steam-boiler. . . . .	Dec. 6, 1870
	Mackay, Patrick N., Virginia City, Nev. Roofing and flooring. . . . .	Feb. 22, 1870
	Mackellar, Smiths & Jordan. (See Ilensburg, Hermann, assignor.) (Two cases.) (Design.)	
	Mackellar, Smiths & Jordan. (See Smith, Richard, assignor.) (Four cases.) (Design.)	
106,946	Mackenzie, William B., Cincinnati, Ohio. Cooking-stove. . . . .	Aug. 30, 1870
102,020	Mackinnon, Hector, Cleveland, Ohio. Smoke-stack. . . . .	April 19, 1870
4,204	Mackintire, James, New York, N. Y. Bottle. . . . . (Design) ..	July 5, 1870
4,205	Same. . . . . Bottle and cup. . . . . (Design) ..	July 5, 1870
110,616	MacClaskey, Joseph O., assignor to self and James E. Tyrrell, Perth Amboy, N. J. Churn. . . . .	Dec. 27, 1870
100,910	Maeneale, Neil, Cincinnati, Ohio. Draw-bridge. . . . .	Mar. 15, 1870
105,102	Same. . . . . Permutation-lock. . . . .	July 5, 1870
100,426	Macomber, Charles E., and Corydon E. Whelpley, Minneapolis, Minn. Driven-well strainer. . . . .	Mar. 1, 1870
	Macomber, F. G. (See Kennedy, Simon H., assignor.)	
101,480	Macomber, J. T., Grand Isle, Vt. Hand seed-planter. . . . .	April 5, 1870
105,705	Macon, Hezekiah, and Joshua Hunt, Providence, R. I. Device for preventing the uncoupling of clutches in spinning-mules. . . . .	July 26, 1870
	Macqueen, Charles D. (See McDaniels, Francis, assignor.)	
	Macy, Wendell, and Charles R. Sherman. (See Sherman & Macy.)	
	Madden, Edward M., <i>et al.</i> (See Tuttle, Joseph H., assignor) . . . . . (Reissue.)	
109,330	Maddox, Joshua P., Belfast, Me. Vessel's hatch. . . . .	Nov. 15, 1870
98,874	Madge, Simon L., Toledo, Ohio. Metallic alloy for plow mold-boards. . . . .	Jan. 18, 1870
106,844	Mafat, Edward, New York, N. Y. Reel for dyeing and finishing silk and velvet woven fabrics. (Antedated Aug. 25, 1870)	Aug. 30, 1870
104,328	Magee, James, assignor to self, Stephen A. Applin, and Elisha C. Clark, Usquepaugh, R. I. Let-off mechanism for looms. . . . .	June 14, 1870
	Magee, John, Chelsea, Mass. Ventilating-damper for stoves. . . . . (Extension) ..	May 19, 1870
102,564	Magers, James W., Reinersville, Ohio. Corn-planter. . . . .	May 3, 1870
100,427	Magill, William, Port Deposit, Md. Base-burning stove. . . . .	Mar. 1, 1870
108,163	Same. . . . . Heating-stove. . . . .	Oct. 11, 1870
100,428	Maginnis, Arthur, and William McCormick, Philadelphia, Pa. Collecting waste spirits from breweries and bars. . . . .	Mar. 1, 1870
101,287	Magoon, Israel P., St. Johnsbury, Vt. Feed-water heater for locomotives. . . . .	Mar. 29, 1870
101,749	Magowan, Allen, Trenton, N. J. Clothes-wringer. . . . .	April 12, 1870
102,565	Maguire, Patrick, New Boston, Mass. Composition for finishing wax-leather. . . . .	May 3, 1870
105,226	Mahan, Schuyler W., Adrian, Mich. Lemon fruit-sirup. . . . .	July 12, 1870
105,227	Same. . . . . Raspberry and strawberry fruit-sirup. . . . .	July 12, 1870
	Maher, William T. (See Smith, William T., assignor.)	
100,538	Mahler, Charles, San Francisco, Cal. Wind-wheel. . . . .	Mar. 8, 1870
109,746	Mahlon, James W., Brooklyn, N. Y. Device for cutting screw-threads and drilling metal. . . . .	Nov. 29, 1870
109,747	Same. . . . . Device for clamping or cutting off tubes and rods. . . . .	Nov. 23, 1870
110,256	Mahon, Isaac B., Dunkirk, Ohio. Cultivator. . . . .	Dec. 20, 1870
110,257	Same. . . . . same. . . . . (Antedated Dec. 15, 1870)	Dec. 20, 1870
102,415	Mahon, Terrence P., New York, N. Y. Bakers' oven. . . . .	April 26, 1870
	Mahone, William, <i>et al.</i> (See Robinett, James T., assignor.)	
	Mahoney, John, and L. J. Blades. (See Blades & Mahoney.)	
	Mahurin, Henry C., <i>et al.</i> (See Pike, Charles F., assignor.)	
109,830	Mahuring, Stephen, assignor to self, James W. Singleton, and William A. Richardson, Liberty, Ill. Car-coupling. . . . .	Dec. 6, 1870
102,566	Mailer, Alexander, assignor to George C. Bell and R. H. Plumb, Buffalo, N. Y. Manufacture of bolts. . . . .	May 3, 1870
103,906	Main, William H., Marietta, Wis. Hand-spinning machine. . . . .	June 7, 1870
100,429	Maine, Sebens C., Boston, Mass. Ventilator for windows. . . . .	Mar. 1, 1870
101,481	Majer, Charles, Williamsburgh, N. Y. Saw-frame. . . . .	April 5, 1870
	Major, John, <i>et al.</i> (See Weidman, Major & Sample.)	
101,635	Makibbin, Thomas A., assignor to self, William M. Pusey, and Seelye Richmond, Annapolis, Md. Roofing. . . . .	April 5, 1870
	Malan, Joseph, and Ellicott D. Averell. (See Averell & Malan.)	
	Same. . . . . (Reissue.)	
3,939	Males, Samuel, Cincinnati, Ohio. Urinal. . . . . (Reissue) ..	April 26, 1870
102,416	Same. . . . . Public urinal. . . . .	April 26, 1870
107,187	Same. . . . . Cider-mill. . . . .	Sept. 6, 1870
107,188	Same. . . . . Urinal. . . . .	Sept. 6, 1870
3,927	Malkin, Levi G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern. . . . . (Design) ..	Mar. 22, 1870
3,928	Same. . . . . same. . . . . (Design) ..	Mar. 22, 1870
102,289	Mallett, Edward Jones, jr., and William S. Ward, New York, N. Y. Nursing-bottle. . . . .	April 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,935 4,508	Mallin, John, Chicago, Ill. Flour-bolt .....	Oct. 4, 1870
	Mallinson, William, assignor to W. & I. Sloane, England. Carpet-pattern. (Design) .....	Dec. 13, 1870
4,509	Same..... same..... (Design) .....	Dec. 15, 1870
3,862	Mallory, Burton, New Haven, Conn. Reversible latch..... (Reissue) .....	Mar. 1, 1870
	Same..... (See Andrews, William H., assignor) .....	(Two cases.)
109,030	Mallory, David D., Mystic Bridge, Conn. Washing and transporting sand.....	Nov. 8, 1870
	Mallory, David S. (See Rich, Charles, assignor.) .....	
100,430	Mallory, James H., La Porte, Ind. Folding ironing-table .....	Mar. 1, 1870
109,918	Same..... Ironing-table .....	Dec. 6, 1870
100,911	Mallory, John, Penn Yan, N. Y. Feather washer and drier.....	Mar. 15, 1870
107,270	Same..... Saw-dressing machine .....	Sept. 13, 1870
	Mallory, Nelson B. (See Gould & Wickham, assignors.) .....	
104,863	Mallory, Orson E., Batavia, N. Y. Moving carriage-top .....	June 28, 1870
106,947	Same..... Shifting carriage-top .....	Aug. 30, 1870
109,523	Same..... same.....	Nov. 22, 1870
100,168	Mallory, Orson E., assignor of one-half interest to Salmon B. Lusk, Batavia, N. Y. Potato-digger .....	Feb. 22, 1870
105,706	Malott, Malancthon B., Richmond, Ind. Car-coupling .....	July 26, 1870
101,636	Maloy, James W., assignor to the Maloy Pressure-Gauge Company, Boston, Mass. Pressure-gauge .....	April 5, 1870
108,497	Maltby, Benjamin K., Cincinnati, Ohio. Wall-protector .....	Oct. 18, 1870
104,972	Maltby, Cyrus A., Roland, Ill. Churn .....	July 5, 1870
108,493	Maltby, Harriet S., Cincinnati, Ohio. Egg and cake beater .....	Oct. 18, 1870
110,057	Maltby, Henry A., Brownsville, Texas. Velocipede .....	Dec. 13, 1870
108,715	Mandeville, George A., assignor to self and Abram C. Wheaton, Newark, N. J. Machine for sizing and felting hat-bodies.....	Oct. 25, 1870
100,050	Mandlebaum, Samuel E., St. Louis, Mo. Commercial portfolio .....	Feb. 22, 1870
103,479	Manger, Henry, Philadelphia, Pa. Self-recording surveying-machine .....	May 24, 1870
	Manhattan Meter Company. (See Horton & Hawkins, assignors.) (Reissue.) .....	
	Manhattan Packing Manufacturing Company. (See Murfey, Eliza D., assignor.) (Ten cases.) .....	
	Same..... (See Murfey, Eliza D., assignor) .....	(Reissue.)
	Manheim, Charles, and Edward L. Perry. (See Perry & Manheim.) (Reissue.) .....	
101,143	Manifold, B. F. (See Martin, Samuel, assignor.) .....	Mar. 22, 1870
104,973	Mann, Albert G., Worcester, Mass. Tuyere .....	July 5, 1870
	Mann, Charles Holbrook, Orange, N. J. Lifting-machine .....	
	Mann, C. J., and William A. Boyden. (See Boyden & Mann.) .....	
100,303	Mann, Henry F., Pittsburgh, Pa. Shaft-coupling .....	Mar. 1, 1870
	Mann, Jacob J., deceased, by William C. Martin, administrator, and Henry F. Mann, Pittsburgh, Pa. Reaping-machine .....	(Extension.)
	Mann, Robert D. (See Lee, John A., assignor) .....	(Reissue.)
106,597	Mann, Robert J., Dallas City, Ill. Sieves .....	Aug. 23, 1870
101,750	Mann, William, Newcastle, Pa. Machine for corrugating sheet-metal .....	April 12, 1870
103,350	Mann, W. Grayson, Savannah, Ga. Tubular submarine viaduct .....	May 24, 1870
109,435	Manneck, Henry, and Charles Strohmenger, New York, N. Y. Combined muff and porte-monnaie. (Antedated Nov. 5, 1870) .....	Nov. 22, 1870
106,494	Manneck, Henry, New York, N. Y. Combination of label-holder and handle .....	Aug. 16, 1870
104,974	Manning, Alfred C., Norwich, Conn. Sash-holder .....	July 5, 1870
105,347	Manning, Edward B., assignor to Manning, Bowman & Co., Middletown, Conn. Coffee-boiler .....	July 12, 1870
105,584	Same..... Coffee or tea pot .....	July 19, 1870
109,529	Manning, William, Chelmsford, Mass. Machine for making corn-cake .....	Nov. 22, 1870
103,760	Manny, Frederick H., Rockford, Ill. Seed-sower .....	May 31, 1870
	Same..... (See Workman, William, assignor) .....	(Reissue.)
	Same..... (See Johnson, Isaac A., assignor.) .....	
99,097	Manny, Jacob R., Chicago, Ill. Hydrant. (Antedated Jan. 12, 1870) .....	Jan. 25, 1870
107,936	Same..... Water cut-off for cisterns .....	Oct. 4, 1870
102,842	Mansfield, George H., Concord, N. H. Planing-machine .....	May 10, 1870
104,610	Manson, George W., assignor to self, Charles M. Vandervoort, and Richard B. Westbrook, Jersey City, N. J. Motive power for sewing-machines .....	June 21, 1870
4,303	Manson, George W., assignor to Charles M. Vandervoort and William F. Fluhrer, New York, N. Y. Hair-pin .....	(Design.)
103,063	Manville, Eli J., Waterbury, Conn. Fluting-machine .....	Aug. 23, 1870
101,966	Manz, Felix, Allegheny City, Pa. Beer-faucets .....	May 17, 1870
108,610	Mapes, Andrew J., Independence, Mo. Tongue, brace, and balance for wagons .....	April 12, 1870
	Mapes, Smith H., et al. (See Voorhis, Mapes & Voorhis.) .....	Oct. 25, 1870
109,530	Marable, Thomas E., assignor to self and S. A. Plummer, Petersburg, Va. Animal-trap .....	Nov. 22, 1870
105,468	Marais, Alexis, assignor to self and John O'Brien, St. Louis, Mo. Parlor-roulette .....	July 19, 1870
105,469	Marble, George W., assignor to self and Charles Way, Charlestown, N. H. Saw for making stuffing for upholstering .....	July 19, 1870
	Marble, James T., et al. (See Mickel, William, assignor.) .....	
110,253	March, Henry C., Limerick Station, Pa. Base-burning stove .....	Dec. 20, 1870
4,066	Marchal, Philipp J., Hartford, Conn. Burial-casket .....	May 3, 1870
102,021	Marchant, Jonah, Farmington, Ill. Cherry-stoner .....	(Design.)
110,380	Marchant, Robert M., England. Pump .....	April 19, 1870
106,845	Marchbank, John, Lansingburgh, N. Y. Construction of brushes .....	Dec. 21, 1870
4,151	Marchbank, John, assignor to James McQuide, Lansingburgh, N. Y. Brush. (Reissue) .....	Aug. 30, 1870
		Oct. 11, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
402,567	Marcus Moritz, New York, N. Y. Street-moistening compound.....	May 3, 1870
98,986	Marcy, J. J., assignor to self and E. Miller & Co., Meriden, Conn. Oil-can vent-spout.....	Jan. 18, 1870
100,912	Same..... Machine for spinning sheet-metal.....	Mar. 15, 1870
	Marden, D. G., and I. N. Patten. ( <i>See Patten &amp; Marden.</i> )	
	Marden, Francis B., and William W. Eastman. ( <i>See Eastman &amp; Marden.</i> )	
98,510	Marden, Jeremiah A., assignor to George M. Gibson and Thomas A. Johnston, Boston, Mass. Stop-valve.....	Jan. 4, 1870
100,169	Margeson, Harris Harding, San Francisco, Cal. Fence.....	Feb. 22, 1870
108,803	Margeson, John B., Lynn, Mass. Machine for jointing stair-rails. (Antedated Oct. 29, 1870).....	Nov. 1, 1870
	Mariner, Henry E. ( <i>See Waters, Alonzo M., assignor.</i> )	
	Marker, George E., and William H. Misner. ( <i>See Misner &amp; Marker.</i> )	
104,864	Marki, John Jacob, assignor to self and William H. Lotz, Chicago, Ill. Carpet-fastening.....	June 28, 1870
110,577	Marki, Johan Jacob, assignor to self, William H. Lotz, and Carl Beer, Chicago, Ill. Ironing-table.....	Dec. 27, 1870
105,470	Markley, Charles, New York, N. Y. Car-coupling.....	July 19, 1870
109,639	Same..... Pump.....	Nov. 29, 1870
101,751	Markley, Edward G., Sunbury, Pa. Railway.....	April 12, 1870
107,698	Marks, George M., Half Moon, Pa. Potato-digger.....	Sept. 27, 1870
99,333	Marks, Joseph, Boston, Mass. Valve and piston packing.....	Feb. 1, 1870
110,481	Marks, Leo, Cincinnati, Ohio. Compound for cleaning carpets.....	Dec. 27, 1870
101,894	Marland, Obadiah, Boston, Mass. Safe.....	April 12, 1870
98,784	Marland, Obadiah, assignor to self, John C. Crosman, and Alfred E. Tilton, Boston, Mass. Treating whisky and other spirits.....	Jan. 11, 1870
99,690	Marlin, John M., Hartford, Conn. Cartridge-shell extractor.....	Feb. 8, 1870
101,637	Same..... Cartridge-ejector.....	April 5, 1870
	Marlow, Edmund O., and Joseph Johnston. ( <i>See Johnston &amp; Marlow.</i> )	
100,913	Marmon, Daniel W., assignor to Nordyke, Marmon & Co., Richmond, Ind. Snut-machine.....	Mar. 15, 1870
100,304	Marquardt, Philip, Buffalo, N. Y. Manufacture of pottery, &c.....	Mar. 1, 1870
103,214	Marr, Alfred, assignor to self and George W. Buckman, Lewiston, Me. Varnish for surfacing railway-heads, drawing and spinning frames.....	May 17, 1870
	Marriam, John O. ( <i>See Chamberlain, Edwin, assignor.</i> )	
103,761	Marsden, William, Newburgh, N. Y. Compound for cattle-food.....	May 31, 1870
106,846	Marsh, Ann Augusta, Frankfort, Mich. Medical compound.....	Aug. 30, 1870
104,043	Marsh, Edwin T., Rochester, N. Y. Letter-box.....	June 7, 1870
107,072	Marsh, Josiah F., Dubuque, Iowa. Vapor-burner.....	Sept. 6, 1870
107,699	Marsh, Riverius, New York, N. Y. Lamp-bracket.....	Sept. 27, 1870
101,895	Marsh, Sylvester, Littleton, N. H. Atmospheric brake for railway-cars.....	April 12, 1870
107,515	Marsh, Thomas, assignor of one-half interest to James Callaghan, Pawtucket, R. I. Egg-beater.....	Sept. 20, 1870
104,174	Marsh, Thomas, and James Berney, Pawtucket, R. I. Egg-beater.....	June 14, 1870
106,182	Same..... same.....	Aug. 9, 1870
104,611	Marshall, Benjamin, Marietta, Ohio. Broiler.....	June 21, 1870
104,474	Marshall, Charles E., Chicago, Ill. Ship's port.....	June 21, 1870
101,288	Marshall, C. K., New Orleans, La. Apparatus for defecating cane-juice. (Antedated March 15, 1870).....	Mar. 29, 1870
102,953	Same..... Harness-saddle.....	May 10, 1870
103,636	Same..... Cart-saddle.....	May 31, 1870
105,821	Marshall, Charles K., assignor to the Climax Horse-Collar Company, New Orleans, La. Horse-collar.....	July 26, 1870
106,379	Marshall, David, Northville, Mich. Carriage-jack.....	Aug. 16, 1870
	Marshall, Elisha G., <i>et al.</i> ( <i>See Porter, Alonzo, assignor.</i> )	
105,585	Marshall, George E., Laurel, Ind. Process and apparatus for the manufacture of paper.....	July 19, 1870
100,170	Marshall, Joseph R., Marion, Pa. Sheep-shearing table.....	Feb. 22, 1870
110,482	Marshall, Moses S., assignor to John T. and John S. Folsom, Somerville, Mass. Washing-machine.....	Dec. 27, 1870
	Marshall, Oliver W., and Nicholas Clute. ( <i>See Clute &amp; Marshall.</i> )	
106,380	Marshall, Thomas, Paterson, N. J. Portable gas-pipe vise.....	Aug. 16, 1870
110,578	Marso, Michael, Chicago, Ill. Folding-lounge.....	Dec. 27, 1870
103,907	Marsters, Enoch J., Shaw's Flats, Cal. Baling-press.....	June 7, 1870
106,705	Same..... Pruning-shears.....	Aug. 23, 1870
106,706	Same..... Fruit-corer.....	Aug. 23, 1870
	Marston, Charles L. ( <i>See Porter, T. W. and H. K., assignors.</i> )	
106,381	Marston, Frank W., Philadelphia, Pa. Corset-spring.....	Aug. 16, 1870
99,334	Marston, T. P., assignor to self and N. M. Phillips, New York, N. Y. Tag-attachment.....	Feb. 1, 1870
	Marston, William E., <i>et al.</i> ( <i>See Hawks, Elizabeth, assignor.</i> ) (Disclaimer.)	
	Martin, Andrew. ( <i>See Root, John, assignor.</i> ) (Two cases.)	
106,847	Martin, Anthony S., Washington, D. C. Safety car-brake.....	Aug. 30, 1870
100,305	Martin, Benjamin Green, Williamsburgh, N. Y. Ice-cream freezer. (Antedated Feb. 14, 1870).....	Mar. 1, 1870
4,177	Same..... Ice-cream freezer..... (Reissue).....	Nov. 15, 1870
105,348	Martin, Edwin, Springfield, Mass. Metallic cartridge.....	July 12, 1870
99,098	Martin, Ephraim, and Samuel M. Chittenden, assignors to Daniel D. Chittenden, Baldwinville, N. Y. Milking-stool.....	Jan. 25, 1870
102,139	Martin, Eugene, assignor to self and Blaise Soules, Waterbury, Conn. Coffee-urn.....	April 19, 1870
	Martin, Henry D., and Samuel Post. ( <i>See Post &amp; Martin.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,531	Martin, James, Morenci, Mich. Sleigh.....	Nov. 22, 1870
99,925	Martin, James W., assignor to self and William A. Drown, jr., Philadelphia, Pa. Wood-bending machine.....	Feb. 15, 1870
107,271	Martin, John F., and William A. Schaffner, Harrisburgh, Pa. Ironing-table.....	Sept. 13, 1870
104,475	Martin, John H., Columbus, Ohio. Breast-strap fastening for harness.....	June 21, 1870
4,185	Martin, John H., Salem, N. Y. Sash-holder..... (Design).....	June 28, 1870
107,393	Martin, John H., and Clinton D. Bradshaw, Danville, Ill. Ditcher and grader.....	Sept. 13, 1870
108,164	Martin, Lucian V. B., Tuscaloosa, Ala. Subsoil-plow.....	Oct. 11, 1870
	Martin, Lyman. (See Pollitt, John, assignor.).....	
106,270	Martin, Norman R., Canandaigua, N. Y. Apparatus for evaporating.....	Aug. 9, 1870
3,831	Martin, Pierre Paul Joseph, France. Cotton-seed huller..... (Reissue).....	Feb. 8, 1870
	Martin, Reune, and Henry G. Thompson. (See Howe, Frederic Webster, assignor.).....	
104,476	Martin, Rudolph, and Matthew Harner, Taneytown, Md. Machine for boring posts and pointing rails.....	June 21, 1870
100,648	Martin, Samuel, assignor to self and B. F. Manifold, York, Pa. Water-wheel.....	Mar. 8, 1870
102,843	Martin, Thomas C., and James Ofliner, assignors to Thomas C. Martin, John Taylor, and Daniel Geiselman, Perrysville, Ohio. Trace-buckle.....	May 10, 1870
	Martin, Timothy A., and John Doyle. (See Doyle & Martin.).....	
	Martin, William C., administrator of Jacob J. Mann, deceased. (See Mann, Jacob J. and Henry F.)..... (Extension.).....	
107,937	Martin, William E., assignor to James D. Martin, Oconee, Ga. Guano-distributor.....	Oct. 4, 1870
109,366	Martin, William Nelson, Boston, Mass. Binding-attachment for sewing-machines.....	Nov. 15, 1870
108,372	Martin, William V., Waverly, Ohio. Turbine water-wheel.....	Oct. 18, 1870
104,612	Martine, Charles F., Boston, Mass. Tuck-creasing mechanism for sewing-machines. (Antedated June 9, 1870).....	June 21, 1870
99,579	Martino, John, Philadelphia, Pa. Fender for fire-place stoves.....	Feb. 8, 1870
99,580	Same..... same.....	Feb. 8, 1870
100,539	Same..... Base-burning fire-place heater.....	Mar. 8, 1870
4,167	Martino, John, and John Currie, assignors to Charles Noble & Co., Philadelphia, Pa. Plate and foot of a "Dexter" cooking-stove. (Antedated May 26, 1870.) (Design).....	June 21, 1870
110,259	Martinson, Henry, Hawksville, Canada. Mode of balancing shafts.....	Dec. 20, 1870
99,781	Martyn, William H., Boston, Mass. Screw-driver.....	Feb. 15, 1870
108,278	Marvel, James E., Seaford, Del. Work-box.....	Oct. 11, 1870
101,482	Marvin, Matthias, Salem, Oreg. Self-tightening buckle.....	April 5, 1870
98,608	Marvin, Walter K., New York, N. Y. Safe.....	Jan. 4, 1870
109,331	Same..... Elevator.....	Nov. 15, 1870
	Same..... (See Parmelee, Dubois D., assignor.).....	
103,637	Masac, Theophile, Good Hope Plantation, La. Life-boat.....	May 31, 1870
103,611	Same..... Mosquito-bar.....	Oct. 25, 1870
	Mascroft, Henry C., and Thomas A. Clark. (See Clark & Mascroft)..... (Two cases).....	
	Mason & Hamlin Organ Company. (See Hamlin, Emmons, assignor)..... (Design).....	
	Same..... same.....	
100,541	Mason, Austin Z., assignor to R. B. Robbins, Adrian, Mich. Bevel-jawed vise.....	Mar. 8, 1870
106,948	Mason, Henry W., Hagerstown, Md. Harvester-cutter.....	Aug. 30, 1870
107,938	Same..... Sulky-plow.....	Oct. 4, 1870
103,064	Mason, James B., Chapel Hill, N. C. Cold cap-still for the distillation of alcoholic and other liquors.....	May 17, 1870
104,750	Mason, John A., Keokuk, Iowa. Car-coupling.....	June 28, 1870
100,306	Mason, John L., New York, N. Y. Fruit-jar.....	Mar. 1, 1870
102,417	Same..... Nursing-bottle.....	April 26, 1870
102,913	Same..... Fruit-jar.....	May 10, 1870
104,613	Mason, Sylvester G., Rochester, N. Y. Saw-hanging.....	June 21, 1870
104,044	Mason, Volney W., Providence, R. I. Adjustable hanger for shafting. (Antedated May 30, 1870).....	June 7, 1870
109,136	Mason, William, Independence, Oregon. Gang-plow.....	Nov. 8, 1870
100,649	Mason, William B., Boston, Mass. Flat-iron polisher and holder.....	Mar. 8, 1870
105,959	Same..... Refrigerator.....	Aug. 2, 1870
101,483	Mason, William D., and Arthur T. Rice, Chicago, Ill. Bail-eye.....	April 5, 1870
104,614	Mason, William S., Raleigh, N. C. Apparatus for cooling buildings and making ice.....	June 21, 1870
106,707	Massey, Albert P., Cleveland, Ohio. Straw-cutter.....	Aug. 23, 1870
106,598	Massey, Gideon B., assignor to Massey Low-Water Detector Company, New York, N. Y. Low-water detector and high-pressure alarm.....	Aug. 23, 1870
108,804	Massey, Gideon B., New York, N. Y. Liquid-meter.....	Nov. 1, 1870
	Massey, Stephen. (See Crowson, Valenus W., assignor.).....	
104,045	Mast, Henry Z., Fork Meeting House, Md. Thill-coupling.....	June 7, 1870
	Mast, Phineas P., and John H. Thomas. (See Thomas & Mast)..... (Two cases.).....	
	Mast, Phineas P., et al. (See Thomas, Mast & Gardiner)..... (Reissue.).....	
	Masterman, William H., and Orrin Collier. (See Collier & Masterman.).....	
4,136	Masters, W. H., Princeton, Ill. Solar camera..... (Reissue).....	Sept. 27, 1870
107,936	Masury, John W., Brooklyn, N. Y. Paint-mill.....	Oct. 4, 1870
109,919	Matheny, Chelton, Greensburgh, Ind. Churn.....	Dec. 6, 1870
104,329	Mather, Colin, and William Rossetter, England. Warping-machine.....	June 14, 1870
108,805	Mather, George Radford, England. Apparatus for giving form to wood.....	Nov. 1, 1870
102,140	Mather, Henry W., New York, N. Y. Rotary pump.....	April 19, 1870
	Mathes, Philip P., and E. Voigt. (See Voigt & Mathes.).....	
107,272	Matherri, Jean Victor, Cleveland, Ohio. Spring-weighing scale.....	Sept. 13, 1870
107,273	Same..... Reversible center-pinion for watches.....	Sept. 13, 1870
102,141	Mathews, William T., Negaunee, Mich. Brick-kiln.....	April 19, 1870
98,785	Mathieu, J., France. Casket for jewels, &c.....	Jan. 11, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,189	Mathieu, J., France. Case for bottles and glasses.....	Sept. 6, 1870
105,103	Mathis, James T., and George W. Harrison, Attala County, Miss. Plow.....	July 5, 1870
105,822	Matteson, Elisha, assignor of two-thirds interest to Abraham Hoagland, Jersey City, N. J. Combined hair curler and crimper.....	July 26, 1870
103,215	Matthews, Charles W. (See Gwathmey, Richard R., assignor.) Matthews, Elbridge G., assignor to F. F. Holbrook, Oakham, Mass. Cutter-stock for swivel-plow.....	May 17, 1870 Nov. 1, 1870
108,919	Same.....Swivel-plow..... Matthews, Elizabeth, John, jr., and George. (See Wilson, James, assignor.) Matthews, Lemuel, and Philester Lee. (See Lee & Matthews.) Matthiesson, F. W., & Hegeler. (See Hegeler, Edward C., assignor.)	
3,851	Mattice, F. M., Detroit, Mich. File-machine.....(Reissue).....	Feb. 22, 1870
104,046	Mattice, Frederick M., Cleveland, Ohio. Socket-pipe machinery.....	June 7, 1870
104,615	Same.....Drain-tile machine.....	June 21, 1870
99,926	Mattison, Judson, Oswego, N. Y. Feed-hopper. (Antedated Feb. 5, 1870).....	Feb. 15, 1870
100,780	Mattox, Thomas T., Griffin, Ga. Plow.....	Mar. 15, 1870
104,751	Mattson, Francis B., assignor to self and William P. Dennis, Rockford, Ill. Lathe.....	June 23, 1870
106,382	Maulding, Pres, and John U. Fraley, Marshall, Texas. Bedstead-fastening.....	Aug. 16, 1870
105,349	Maulick, Gottlieb, Trenton, N. J. Saw.....	July 12, 1870
101,371	Maud, W. L., Milan, Texas. Double pincers.....	Mar. 29, 1870
105,960	Mauran, William A., Providence, R. I. Manufacture of carpet-lining.....	Aug. 2, 1870
103,351	Maurice, Charles Camille, New York, N. Y. Printing-press.....	May 24, 1870
103,216	Maurin, Vve. Adrien, and Gustave Toiray, France. Calendar.....	May 17, 1870
104,333	Mauthé, Henry, assignor to Julien Larru, New York, N. Y. Brick-machine.....	June 14, 1870
110,058	Maxfield, Allen C., Biddeford, Me. Hair-restorative.....	Dec. 13, 1870
104,477	Maxfield, Charles A., New York, N. Y. Paper-box machine.....	June 21, 1870
3,950	Maxim, Hiram S., New York, N. Y. Steam gas-generator.....(Reissue).....	May 3, 1870
99,927	Maxim, Hiram S., assignor to Rodley, McAlister & Co., New York, N. Y. Apparatus for generating gas for head-lights.....	Feb. 15, 1870
	Maxson, Charles, and Thomas Isherwood. (See Nuttall, James, assignor.) Maxson, John, and Warren Kinyon. (See Kinyon & Maxson.) Maxson, John T. (See De Witt, Thomas, assignor).....(Three cases.)	
108,373	Maxwell, Alonzo S., Dixon, Ill. Bakers' table.....	Oct. 18, 1870
104,616	Maxwell, James R., and Ezra Cope, Cincinnati, Ohio. Steam-pump.....	June 21, 1870
102,568	Maxwell, Joseph W., Louisville, Ky. Machine for folding powders.....	May 3, 1870
3,887	Maxwell, Obadiah C., Thomas L. Neal, and Charles L. Long, Dayton, Ohio. Trade-mark.....(Design).....	Mar. 8, 1870
102,290	Maxwell, V. L., Wilkesbarre, Pa. Faucet-lock. (Antedated April 18, 1870).....	April 26, 1870
110,483	May, Edwin, Indianapolis, Ind. Construction of prisons.....	Dec. 27, 1870
104,865	May, Edwin, Indianapolis, Ind. Construction of prison-walls.....	June 28, 1870
	May, Francis D., et al. (See Mead, May & Hoyt.) May, George W. (See Smith, William James, assignor.)	
100,914	May, James B., Magnolia, Ohio. Fruit-drier.....	Mar. 15, 1870
99,216	May, Oliver T., Canastota, N. Y. Non-corrosive metallic roofing.....	Jan. 25, 1870
109,187	May, Thomas, Brooklyn, N. Y. Variable cut-off apparatus.....	Nov. 8, 1870
102,569	Mayben, John, Milroy, Pa. Farm-gate. (Antedated April 23, 1870).....	May 3, 1870
106,495	Maydele, David, Norwich, N. Y. Spring for piston-packing.....	Aug. 16, 1870
105,471	Mayhew, James, West Tisbury, Mass. Churn.....	July 19, 1870
110,579	Mayhew, Lorenzo, Saratoga Springs, N. Y. Axle-skein.....	Dec. 27, 1870
107,516	Mayhew, William A., Peabody, Mass. Fruit and vegetable slicer.....	Sept. 23, 1870
	Maynard, Edward, Washington, D. C. Cartridge.....(Extension).....	June 4, 1870
4,424	Maynard, George H., Berlin, Mass. Shoe.....(Design).....	Oct. 18, 1870
105,228	Maynard, James A., Newtonville, Mass. Carriage and car wheel and axle-box.....	July 12, 1870
103,612	Same.....Hub for carriages.....	Oct. 25, 1870
109,436	Mayo, Charles H., Bath, Me. Sawing-machine.....	Nov. 22, 1870
104,153	Mayo, Israel C., Gloucester, Mass. Transparent shield.....	June 14, 1870
102,692	Mayo, Israel C., assignor to self and John J. Currier, Gloucester, Mass. Lantern-globe.....	May 3, 1870
101,289	Mayo, Robert H., Paris, Texas. Apparatus for separating the seed from fruit-pulp.....	Mar. 29, 1870
108,806	Mayo, Uriel K., Boston, Mass. Manufacture of gold foil for dental purposes.....	Nov. 1, 1870
102,291	Mayo, William S., Poughkeepsie, N. Y. Trunk.....	April 26, 1870
102,292	Same.....same.....	April 26, 1870
110,484	Mayor, Pierre A., New York, N. Y. Water-faucet.....	Dec. 27, 1870
110,260	Mayor, Thomas, Providence, R. I. Flier for spinning.....	Dec. 20, 1870
	Mayoux, A. (See Purington, Turner C., assignor.) Mays & Bliss. (See Hamlin, Albert, assignor).....(Two cases.) Mays, Bliss & Co. (See Bliss, Eliphalet W., assignor.)	
98,875	Mays, Peter & Price, Clearfield, Pa. Medical compound.....	Jan. 18, 1870
99,453	McAdams, John, Brooklyn, N. Y. Hinge for show-cases.....	Feb. 1, 1870
104,047	Same.....Ruling-machine.....	June 7, 1870
104,478	McAdams, William, Newton, Mass. Journal-bearing for calendar-rolls.....	June 21, 1870
102,022	McAleer, George, Worcester, Mass. Folding-chair.....	April 19, 1870
105,472	Same.....same.....	July 19, 1870
101,638	McAlister, Charles J., Chicago, Ill. Flooring. (Antedated March 24, 1870).....	April 5, 1870
104,175	Same.....Tassel. (Antedated June 9, 1870).....	June 14, 1870
104,176	Same.....Sofa and bedstead.....	June 14, 1870
104,975	McAllaster, Daniel, Malden, Mass. Miter-box and miter-saw.....	July 5, 1870
	McAllister, Charles. (See Wallace, William, assignor.) McAllister, Henry, jr., administrator. (See Player, John).....(Two cases.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,920	McAllister, William, Lawrence, Mass. Flock-machine .....	Dec. 6, 1870
101,896	McAlpin, Angus, Savannah, Ga. Brick and other mold .....	April 12, 1870
107,517	McAnulty, Joseph, Bentley, Ill. Hedge-trimmer .....	Sept. 20, 1870
108,920	McArthur, Duncan, assignor to Sargent & Co., New Haven, Conn. Door-bolt .....	Nov. 1, 1870
	McArthur, Thomas J., and Isaac W. Parmenter. (See Geraghty, Michael F., assignor.)	
104,048	McArthur, William, assignor to self and James Akin Smith, Philadelphia, Pa. Spring bed-bottom .....	June 7, 1870
101,484	McAtee, Morion S., Chester, Ill. Water-elevator .....	April 5, 1870
103,613	McAuley, Henry W., Sterling, Wis. Nut-lock .....	Oct. 25, 1870
109,031	McAuliff, John D., St. Louis, Mo. Device for fastening desks, seats, &c., to floors. (Antedated Oct. 28, 1870) .....	Nov. 8, 1870
100,171	McAvoy, Hugh L., assignor to self and Samuel Ault, Baltimore, Md. Extensible gas-tube for chandeliers. (Antedated Feb. 10, 1870) .....	Feb. 22, 1870
	McBlair, J. H. (See Shiver, Elisha, assignor.) (Two cases.)	
	McBride, William I. (See Cocker, Peter, assignor.)	
100,051	McCaffery, James, Waterloo, Iowa. Harvester .....	Feb. 22, 1870
103,217	McCall, Edwin R., Simcoe, Canada. Harvester-rake .....	May 17, 1870
	McCallister, J. P. (See Franklin, Jonathan H., assignor.)	
	McCallum, Andrew. (See Fowler, Elisha M., assignor.)	
	McCallum, Crease & Sloan. (See Heald, Alfred, assignor.) (Six cases.) (Design.)	
105,104	McCargar, Tyrus, assignor to self and Simeon P. Peters, Masonville, Iowa. Spring catch-bolt .....	July 5, 1870
104,049	McCarter, Arthur, Salem, Ohio. Meat-chopper .....	June 7, 1870
	McCarthy, Daniel O. (See Trump, Isaac, assignor.)	
103,218	McCarthy, Edmund P., San Francisco, Cal. Manufacture of illuminating-gas ..	May 17, 1870
104,866	McCarthy, William C., Pittsburgh, Pa. Apparatus for cleaning cess-pools, vaults, privies, &c. ....	June 28, 1870
107,940	McChesney, Henry, assignor to self and Joseph W. Clark, Buffalo, N. Y. Ironing-table .....	Oct. 4, 1870
101,897	McChesney, Reuben, Birmingham, Conn. Scroll-saw .....	April 12, 1870
103,921	McChesney, Reuben, assignor to self, Thomas L. and Sidney Cornell, Birmingham, Conn. Scroll-saw .....	Nov. 1, 1870
	McClary, T. J., and George O. Wickers. (See Wickers & McClary.)	
101,898	McClean, John, New Orleans, La. Dredging-machine .....	April 12, 1870
104,177	McCleane, George F., Pittsburgh, Pa. Four-high roll for rolling metal .....	June 14, 1870
	McCleary, Samuel, and E. H. Shoemaker. (See Shoemaker & McCleary.)	
102,023	McClellan, Felix G., Attica, Ohio. Combined hay-rack and wagon-box .....	April 19, 1870
109,640	McClelland, Felix G., Attica, Ohio. Bolt. (Antedated Nov. 19, 1870) .....	Nov. 29, 1870
104,479	McClelland, John, Washington, D. C. Device for molding and casting pipe ..	June 21, 1870
105,823	McClelland, John A., Louisville, Ky. Process for coating objects with collodion and its compounds. (Antedated July 22, 1870) .....	July 26, 1870
99,691	McClelland, Robert W., Springfield, Ill. Carriage-wheel .....	Feb. 8, 1870
101,752	Same.....Horse hay-rake. (Antedated April 4, 1870) .....	April 12, 1870
	McClintock, John A., and Henry Shoemaker. (See Shoemaker & McClintock.)	
107,073	McClunie, Thomas, Hartford, Conn. Flower-pot, vase, and basket .....	Sept. 6, 1870
	McClure, A. K., and James M. Sellers. (See Vaughn, Aaron C., assignor.)	
99,335	McClure, Jacob, assignor to C. D. and E. J. Copp, Nashua, N. H. Pencil-sharpener .....	Feb. 1, 1870
103,219	McClure, Jacob W., Jefferson City, Mo. Churn-dasher .....	May 17, 1870
105,229	McClure, Jones K., Cornersville, Miss. Combined seeder, harrow, cultivator, and planter .....	July 12, 1870
105,473	McClure, Joseph A., Mount Carroll, Ill. Corn-planter .....	July 19, 1870
103,614	McClure, William B., Alexandria, Va. Cart-saddle .....	Oct. 18, 1870
101,290	McClure, William D., Constitution, Ohio. Stone-drill .....	Mar. 29, 1870
99,928	McColl, Mary Jane, Chicago, Ill. Machine for cutting wax for artificial flowers, &c. ....	Feb. 15, 1870
100,540	Same.....Compound for the manufacture of wax flowers. ....	Mar. 8, 1870
109,437	McCollum, Peter, Fayette, Mo. Hand corn-planter. (Antedated Nov. 17, 1870) ..	Nov. 22, 1870
	McComb, David, deceased, by Mary Ann McComb, administratrix, Memphis, Tenn. Non-elastic band for bales of cotton and other fibrous materials. (Extension) .....	June 13, 1870
109,438	McComber, Joel, Rockport, Ill. Method of constructing boots and shoes .....	Nov. 22, 1870
	McCombs, Robert, and Philemon Merryman. (See Merryman & McCombs.)	
107,074	McConaughy, Robert A., assignor to James Reynolds, sr., Ripley, Ohio. Field-roller .....	Sept. 6, 1870
103,220	McConaughy, Thomas B., and James Adams, Newark, Del. Nut-lock .....	May 17, 1870
103,480	Same.....Railway-rail joint-fastening .....	May 24, 1870
107,274	McConnell, Franklin, Dowagiac, Mich. Piston-packing .....	Sept. 13, 1870
107,394	McConnell, James H., Beaver Falls, Pa. Cooking-stove .....	Sept. 13, 1870
100,431	McConnell, John, Tyro, Ohio. Fence .....	Mar. 1, 1870
104,617	McConnell, William, Clarksville, N. J. Mirror and picture frame .....	June 21, 1870
	McCool, W. L., and W. K. Foltz. (See Foltz & McCool.)	
	McCord & Wheatley. (See Donnellan, Charles E., assignor.)	
101,485	McCord, John, assignor to self and John Bryce, East Birmingham, Pa. Plunger for glass molds .....	April 5, 1870
	McCord, Joseph S., and John H. Gerhart. (See Gerhart & McCord.)	
	McCormick, C. H., & Brother. (See McCormick, Baker & Erpelding, assignors.)	
	McCormick, Cyrus H. and Leander J. (See Young, McClintock, jr., assignor) (Three cases) .....	(Reissue.)

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,804	McCormick, James, Boston, Mass. Brewing ale, beer, &c. (Reissue)	Jan. 25, 1870
101,031	McCormick, John B., Dayton, Ohio. Harvester	Mar. 23, 1870
107,275	McCormick, John G., Louisville, Ky. Tight and loose pulley	Sept. 13, 1870
104,331	McCormick, L. J., William R. Baker, and L. Erpelding, assignors to C. H. McCormick & Brother, Chicago, Ill. Harvester	June 14, 1870
104,618	McCormick, Leander J., and William R. Baker, assignors to C. H. McCormick & Brother, Chicago, Ill. Harvester	June 21, 1870
103,922	Same	Nov. 1, 1870
107,700	McCormick, Patrick, New York, N. Y. Washer-cutter	Sept. 27, 1870
106,599	McCormick, Riley T., Green Castle Junction, Ind. Churn	Aug. 23, 1870
109,532	McCormick, Thomas J., et al. (See Flynn, William H., assignor.)	Nov. 22, 1870
108,807	McCormick, William, Philadelphia, Pa. Awning for horses	Nov. 22, 1870
99,929	McCormick, William, and Arthur Maginnis. (See Maginnis & McCormick.)	Nov. 1, 1870
110,485	McCormick, William H., assignor to self and John T. Williams, Muncie, Ind. Weighing-scale	Feb. 15, 1870
106,708	McCormick, J. B., Dayton, Ohio. Harvester	Dec. 27, 1870
106,383	McCoy, Amos D., Alexandria, La. Camp-bedstead. (Antedated Dec. 16, 1870)	Aug. 23, 1870
103,499	McCoy, John, assignor to self and Carbon Stove Company, Burlington, N. J. Hot-air furnace	Aug. 16, 1870
105,350	McCracken, Edwin D., New York, N. Y. Galvanic battery	Oct. 18, 1870
105,351	Same. Apparatus for separating gas-tar and ammoniacal liquors	July 12, 1870
4,101	McCracken, Edwin D., assignor to self, Henry J. Newton, Henry P. Kirkland, and Joseph R. Husson, New York, N. Y. Gas-retort	July 12, 1870
104,332	Same. Manufacture of illuminating-gas	Aug. 16, 1870
4,206	McCracken, Edwin D. (See Pierson, Edward M., assignor.)	June 14, 1870
102,024	McCreight, Alexander, Tranquility, Ohio. Saw-mill (Reissue)	July 5, 1870
102,844	McCroan, Eli, et al. (See Ham, John D., assignor.)	April 19, 1870
104,867	McCroary, Thomas, Fayette City, Pa. Coal-car	May 10, 1870
104,868	McCue, William A. (See Brewbaker, Isaac, assignor.)	June 23, 1870
104,869	McCulloch, William, et al. (See Van Slooten, Hunt & McCulloch.)	June 23, 1870
106,183	McCullough, James K., and Frank W. Smith, Burlington, Iowa. Brace for school-desks (Design)	June 23, 1870
101,144	McCully, Robert, Philadelphia, Pa. Fruit-jar. (Antedated April 2, 1870)	Aug. 9, 1870
107,276	McCune, Thomas W., Pittsburgh, Pa. Tuyere for blast-furnaces	Mar. 22, 1870
102,693	McCurdy, David, Ottawa, Ohio. Bridge. (Antedated June 17, 1870)	Sept. 13, 1870
109,307	Same. same. (Antedated June 17, 1870)	May 3, 1870
106,384	Same. same. (Antedated June 17, 1870)	Mar. 1, 1870
108,923	Same. Fence	Aug. 16, 1870
103,481	McDaniel, George W., assignor to self, Charles G. Fisher, and Nisbet Turnbull, Georgetown, D. C. Money-box, &c.	Nov. 1, 1870
101,291	McDaniels, Francis, assignor to Charles D. Macqueen, Philadelphia, Pa. Lamp	May 24, 1870
100,650	McDermott, James, Cleveland, Ohio. Machine for splitting grindstones	Mar. 29, 1870
106,600	McDevitt, Martin, Hampton, Va. Liquid-measure	Mar. 8, 1870
109,533	McDonald, Alvin, and James M. White, Washington, Ill. Paint-brush	Aug. 23, 1870
98,699	McDonald, Alvin, assignor of one-half interest to James M. White, Washington, Ill. Paint-brush	Nov. 22, 1870
99,692	McDonald, Andrew Y., Dubuque, Iowa. Pump	Jan. 11, 1870
100,172	McDonald, Hugh, Pittsburgh, Pa. Manufacture of cast steel	Feb. 8, 1870
99,581	McDonald, J. M., McCoysville, Pa. Horse hay-fork	Feb. 22, 1870
110,381	McDonald, Telford & Co., J. D., et al. (See Crawford & Clarke, assignors.)	Feb. 8, 1870
109,032	McDonnell, Patrick E., Lyons, Ill. Motive power for driving street-cars	Dec. 20, 1870
103,908	McDougall, James T., San Francisco, Cal. Apparatus for collecting precious metals	Nov. 8, 1870
110,059	McDowell, H. S., Columbus, Texas. Bridge	June 7, 1870
98,699	McDowell, William L., Philadelphia, Pa. Register for air-flues	Dec. 13, 1870
99,692	Same. Implement for under-cutting sand-cores and flasks	Dec. 13, 1870
100,172	McDowell, William P. (See Zantzinger, Augustus, assignor.)	Jan. 11, 1870
99,581	McElevey, G. H., New Castle, Pa., Fire-place grate	Mar. 15, 1870
110,381	McEwen, Joseph C., Micanopy, Fla. Table-fan	Oct. 4, 1870
109,032	McFadden, William W., Ennisville, Pa. Horse hay-fork	Sept. 27, 1870
103,908	McFall, Hamilton Bell, Mount Solon, Va. Churn	Feb. 15, 1870
110,059	McFarland, David, assignor to A. M. Ingersoll, New York, N. Y. Life-raft	May 17, 1870
3,814	McFarland, John. (See Bishop, George W., assignor.)	
100,781	McFarland, William, Williamsburgh, N. Y. Safe (Design)	
108,038	Same. Burglar-proof safe	
107,794	McFarlane, Duncan, and Samuel Campbell. (See Campbell & McFarlane.)	
99,930	McPatrick, James, Lena, Ill. Addressing-machine	
103,065	McFeely, Bernard J., Chestnut Spring, Pa. Apple corer and quarterer	
102,570	McGeary, Thomas J., Newark, N. J. Ornamental cornice	
109,641	McGee, Joseph A., Sharpsville, Ind. Horse hay-rake	
98,786	McGeorge, H. D., et al. (See Guseman, Davis & McGeorge.)	
109,231	McGhee, James. (See Whitker, Daniel D., assignor.)	
102,571	McGill, John, assignor to Benjamin S. Goodwin and Hiram Whitney, Boston, Mass. Compound for dressing textile fabrics	
106,848	McGill, John W., Washington, D. C. Hat	
98,786	McGill, P. M., Washington, D. C. Artificial fuel	
109,231	Same. same.	
102,571	McGinniss, John, et al. (See Mealy, McGinniss & Cunningham.)	
106,848	McGinniss, William, Auburn Township, Pa. Water-motor	
106,848	McGlothlen, George H., Chariton, Iowa. Churn	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,486	McGlumphy, John S., Wind Ridge, Wis. Sash-fastener.....	April 5, 1870
	McGonegal, Henry G. (See Fowler, Edgar M., assignor.)	
	McGowan, John H. (See Caldwell, David B., assignor.)	
109,138	Same.....Cincinnati, Ohio. Pitman.....	Nov. 8, 1870
109,332	Same.....Pipe-coupling.....	Nov. 15, 1870
109,534	Same.....Pump.....	Nov. 22, 1870
106,849	McGowan, Robert L., assignor to self, Charles A. Woods, John Fletcher, and Thomas Johnston, New Brighton, Pa. Combined lock-nut and splice-bar.....	Aug. 30, 1870
	McGrath, Theodore T., and John Russell. (See Russell & McGrath.)	
109,921	McGregor, Frazee B., Pontiac, Mich. Piano-action.....	Dec. 6, 1870
102,025	McGregor, Rob Roy, Covington, Tenn. Axles and their boxing.....	April 19, 1870
103,066	McGregor, William, Chicago, Ill. Chair, bedstead, and crib.....	May 17, 1870
105,586	McGrew, John, West Columbia, W. Va. Machine for packing salt.....	July 19, 1870
106,496	McGuire, Alexander, Winchester, Conn. Handle for caskets.....	Aug. 16, 1870
102,845	McHench, William H., Cobleskill, N. Y. Ladder.....	May 10, 1870
107,795	McHenry, Green, Louisa, Ky. Machine for ruling and copying.....	Sept. 27, 1870
107,701	McIlhenny, Edmund, New Iberia, La. Pepper-sauce.....	Sept. 27, 1870
105,105	McIlhenny, George A., Washington, D. C. Lock for pipe-couplings.....	July 5, 1870
98,987	McIlvain, Jeremiah, Churchville, Md. Journal-box.....	Jan. 18, 1870
108,615	McIlvaine, Charles, Philadelphia, Pa. Copying-ink for printing.....	Oct. 25, 1870
103,482	McIlwain, Henry C., and Alonzo Brumfiels, Connersville, Ind. Rotary blower.....	May 24, 1870
101,372	McInnis, William N., Northumberland, Pa. Electro-magnetic annunciator.....	Mar. 29, 1870
108,039	McInroy, Donald, Brooklyn, E. D., N. Y. Bustle.....	Oct. 4, 1870
99,099	McIntire, James, assignor to W. C. Dickey, Hopewell Cotton Works, Pa. Cord-making machine. (Antedated Jan. 14, 1870).....	Jan. 25, 1870
101,639	McIntosh, Elmer D., Washington, D. C. Brake to prevent reverse motion of driving-wheels in sewing-machines.....	April 5, 1870
	McIntosh, Henry P., et al. (See Jackson, Richard A., assignor.)	
	McIntosh, Oliver T., et al. (See Ryerson, Stancliff & McIntosh.)	
	Same.....(See Ryerson & Stancliff, assignors.)	
109,922	McIntyre, William, New York, N. Y. Padlock.....	Dec. 6, 1870
104,870	McIntyre, John, Syracuse, N. Y. Mortar-mill.....	June 28, 1870
100,486	McKay, Angus, Montreal, Canada. Automatic door-bolt.....	Dec. 27, 1870
102,293	McKay, Archibald L., Bolton, Miss. Gas-generator.....	April 26, 1870
102,142	McKay, Ferdinand C. D., Elmira, N. Y. Self-winding and balancing curtain-fixture.....	April 19, 1870
	McKay, Gordon, trustee of the McKay Sewing-Machine Association. (See Reed, T. K., assignor.)	
	McKay, Gordon, trustee. (See Gilson, John, assignor.)	
	Same.....(See Glidden, Charles W., assignor.)	
	Same.....(See Spinney, William F., assignor.)	
104,050	McKay, William, assignor to self and Charles E. Bayley, Newburyport, Mass. Faucets.....	June 7, 1870
100,173	McKean, Edward T., Hammonont, N. J. Car-coupling.....	Feb. 22, 1870
105,352	McKean, Edwin R., Nashville, Tenn. Cask-gauging instrument.....	July 12, 1870
	Same.....(See Williamson, George S., assignor.)	
	McKee & Brothers. (See Ballinger, Charles, assignor.)	
103,483	McKee, James M., Hunt's Station, Ohio. Fence.....	May 24, 1870
	McKee, James W., and A. C. Hallam. (See Hallam & McKee.)	
107,075	McKee, Samuel, Pittsburgh, Pa. Telegraph-insulator.....	Sept. 6, 1860
	McKee, William. (See Huntington, Abel H., assignor.)	
109,535	McKee, William P., Cincinnati, Ohio. Fluting-machine.....	Nov. 22, 1870
	McKeen, Benjamin, and Handley Starratt. (See Starratt, James, assignor.)	
107,796	McKellar, Duncan, Selma, Ala. Planter and distributor.....	Sept. 27, 1870
101,640	McKelvey, S. P., assignor to self and G. W. Snook, Farmer City, Ill. Ditching-machine.....	April 5, 1870
105,106	McKenna, Alexander, John, and Thomas, Pittsburgh, Pa. Hydrant.....	July 5, 1870
103,638	McKenna, Robert, White's Station, Tenn. Cotton-gin.....	May 31, 1870
103,500	Same.....same.....	Oct. 18, 1870
102,694	McKenney, Alendo, Portland, Me. Shoe-fastener.....	May 3, 1870
105,707	McKenzie, Duncan, Brooklyn, N. Y. Wood-pavement.....	July 26, 1870
109,139	Same.....same.....	Nov. 8, 1870
3,929	McKenzie, Duncan, assignor to Mary Ann Elizabeth McKenzie, Brooklyn, N. Y. Bakers' oven.....	April 19, 1870
	(Reissue.)	
100,432	McKenzie, George, Scotland. Manufacture of illuminating-gas from coal and other materials.....	Mar. 1, 1870
	Same.....Compound for the manufacture of illuminating-gas.....	Mar. 1, 1870
109,232	McKenzie, George, Zanesville, Ohio. Elevator.....	Nov. 15, 1870
102,846	McKeon, Abram B., Rutherford Park, N. J. Pavement.....	May 10, 1870
109,333	Same.....Concrete pavement. (Antedated Nov. 5, 1870.).....	Nov. 15, 1870
110,261	McKeone, Richard J., Inverness, Mich. Platform weighing-scale.....	Dec. 20, 1870
	McKeone, Van Haagen & Co. (See Van Haagen, Anthony, assignor.) (Design.)	
102,954	McKernan, James H., Indianapolis, Ind. Mode of operating shutters for hatchways.....	May 10 1870
	McKibben, James, and Frank A. Dann. (See Dann & McKibben.)	
	McKinley, Robert, administrator. (See Crans, Peter, jr.)	
101,145	McKinnon, John A., Selma, Ala. Medical compound for the cure of colic.....	Mar. 22, 1870
109,033	McKown, Alexander W., Honesdale, Pa. Spring for wagons.....	Nov. 8, 1870
	McLagon & Stevens. (See Püeghar, F. P., assignor).....(Two cases.)	
	Same.....(See Root, John, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,233	McLain, James B., assignor to Henry M. Wyeth, Newark, Ohio. Device for delivering mail-bags to cars. ....	Nov. 15, 1870
	McLanahan, William W., and George Thomas. (See Thomas & McLanahan.)	
	McLane, Daniel H., and John F. Thomas. (See Thomas & McLane.)	
110,060	McLaren, John C., Montreal, Canada. Belt-splice point-finisher. ....	Dec. 13, 1870
	McLaughlin, Edward, and Ernest G. Chormann. (See Chormann & McLaughlin.)	
98,787	McLaughlin, Francis, deceased, (John Dwyer, administrator,) Boston, Mass. Brush. ....	Jan. 11, 1870
108,374	McLaughlin, Ira, East Arlington, Vt. Drill and holder. ....	Oct. 18, 1870
107,518	McLaughlin, John, Steubenville, Ohio. Clothes-wringer. ....	Sept. 20, 1870
106,850	McLaughlin, John, assignor to self and Jacob Apple, Philadelphia, Pa. Molding-flask. ....	Aug. 30, 1870
	McLaughlin, John, <i>et al.</i> (See Curry, John Mayrs, assignor.)	
104,178	McLaughlin, John C., Pittsburgh, Pa. Steam-boiler blow-off pipe. ....	June 14, 1870
108,501	McLaughlin, Samuel, Philadelphia, Pa. Slide-door for heating and puddling furnaces. (Antedated Oct. 8, 1870) .....	Oct. 18, 1870
100,308	McLaughlin, Samuel, assignor to self and Benjamin R. Caskey, Philadelphia, Pa. Puddling-furnace. ....	Mar. 1, 1870
106,184	McLaughlin, William, Jersey City, N. J. Grain-scouring machine. ....	Aug. 9, 1870
	McLean, Henry, <i>et al.</i> (See Jarrold, Edgar T., assignor.)	
105,961	McLean, John N., Philadelphia, Pa. Sewing-machine. ....	Aug. 2, 1870
	McLean, John N., <i>et al.</i> (See Benner, Joseph, assignor.)	
	McLellan, George F., and George B. Armstrong. (See Armstrong & McLellan.)	
	McLellan, R. W. B., <i>et al.</i> (See Fitch, Devoe & McLellan.)	
103,067	McLendon, Willis M., Greenville, Ga. Combined cotton-seed planter and fertilizer-distributor. ....	May 17, 1870
103,484	McLeod, Alexander, and George Granville Lobdell, Wilmington, Del. Securing car-wheels to axles. ....	May 24, 1870
	McLeod, Charles A. (See Bussey, Esek, assignor) ..... (Reissue.)	
99,931	McLeod, Norman, Clio, S. C. Feed-cutter and thrasher. ....	Feb. 15, 1870
	McLeod, William G., <i>et al.</i> (See Berry, William, assignor.)	
	McLure, John, and John B., <i>et al.</i> (See Baird, James M., assignor.)	
	McLure, John, and Joseph A. Connelly. (See Connelly & McLure.)	
99,454	McMahon, Thomas, Williamsburgh, N. Y. Combined faucet measure and funnel. ....	Feb. 1, 1870
104,179	McManus, James C., Providence, R. I. Crucible-stand for fusing metals. ....	June 14, 1870
103,909	McManus, Peter, and George W. Latimer, Detroit, Mich. Paste for polishing metals. ....	June 7, 1870
101,487	McMaster, H. D., and Abraham Dale, Ireland. Governor for steam-engines. ....	April 5, 1870
98,788	McMaster, J. M., Rochester, N. J. Car-brake and starter. ....	Jan. 11, 1870
	McMeehan, James, <i>et al.</i> (See Lloyd, George A., assignor.)	
	McMeehan, James. (See Bidwell, James, assignor.)	
110,262	McMichael, John, assignor to Wright Brothers & Co., Philadelphia, Pa. Machine for bending wood. ....	Dec. 20, 1870
102,572	McMillan, James, Fairport N. Y. Tube-well. (Antedated Feb. 15, 1870) .....	May 3, 1870
106,709	Same. .... Perinton, N. Y. Drain-tube. ....	Aug. 23, 1870
104,180	McMillan, James W., Granger, Ohio. Milk-cooler. ....	June 14, 1870
105,824	McMillan, William H., and David Morris, assignors to Morris, Tasker & Co., Philadelphia, Pa. Turning-device. ....	July 26, 1870
106,385	McMillen, G. M. L., Dayton, Ohio. Horse hay-rake. ....	Aug. 16, 1870
100,309	McMillin, Emerson, Ironton, Ohio. Purification of coal-gas. ....	Mar. 1, 1870
102,695	McMillin, James, Ripley, Ohio. Attachment of pole or shafts to wheeled vehicles. ....	May 3, 1870
99,582	McMonnies, William, Brooklyn, N. Y. Grate-bar. ....	Feb. 8, 1870
	McMullen, James, <i>et al.</i> (See Himmer, Vitalis, assignor) ..... (Two cases.)	
104,619	McMurtry, John, Mount Sterling, Ky. Hardening magnesian limestone. ....	June 21, 1870
102,696	McNair, David A., Washington, D. C. Seal-lock. ....	May 3, 1870
103,221	McNary, William H., Brooklyn, N. Y. Counting-register. ....	May 17, 1870
110,362	McNaughten, William, Utica, Ohio. Elevator for merchandise. (Antedated Dec. 9, 1870) .....	Dec. 20, 1870
100,542	McOmber, Abner, and Mina Ward, Schenectady, N. Y. Instrument for coupling railroad-cars. ....	Mar. 8, 1870
100,434	McPhail, James, Charles City, Iowa. Grain-fan. ....	Mar. 1, 1870
102,955	McPheeters, Archibald A. and Robert P., Arbor Hill, Va. Water elevator and carrier. ....	May 10, 1870
107,797	McPherson, Daniel, Caledonia, N. Y. Grain-binder. ....	Sept. 27, 1870
	McPherson, David, and Charles Thayer. (See Thayer & McPherson.)	
100,174	McPherson, John, Baltimore, Md. Soldering-furnace. ....	Feb. 22, 1870
	McPherson, William, <i>et al.</i> (See Wood, Enoch, assignor.)	
	McQuide, James. (See Marchbank, John, assignor) ..... (Reissue.)	
106,601	McRae, Daniel M., Webberville, Texas. Cotton-picker. ....	Aug. 23, 1870
106,602	McSherry, Daniel E., Dayton, Ohio. Seeding-machine. ....	Aug. 23, 1870
104,976	McSwain, Moses S., Pole Grove, Wis. Water-elevator. ....	July 5, 1870
	Meacham, William H., <i>et al.</i> (See Frey, Franklin, assignor.)	
105,353	Mead, David, and Ezra W. Watson, Danversport, Mass. Pegging-jack. ....	July 12, 1870
105,708	Mead, Edwin D., Shortsville, N. Y. Rotary engine. ....	July 26, 1870
109,642	Mead, Melville E., Darien, Conn. Chimney-top. ....	Nov. 29, 1870
98,511	Mead, Theodore H., Boston, Mass. Cruet. ....	Jan. 4, 1870
107,395	Mead, Wait, and George E. Starbuck, Chestertown, N. Y. Provision-safe. ....	Sept. 13, 1870
110,150	Mead, Wait, Francis D. May, and Rufus L. Hoyt, Chestertown, N. Y. Spring-seat for vehicles. ....	Dec. 13, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,292	Mead, William S., New York, N. Y. Sewing-machine. (Antedated March 17, 1870)	Mar. 29, 1870
110,061	Meador, George and Charles, Prairie Center, Ill. Field corn-picking and husking machine	Dec. 13, 1870
104,480	Meaders, Galen, assignor to self and Rozel Weissinger, Jeffersonville, Ky. Hay gatherer and carrier	June 21, 1870
110,580	Meadows, William Henry, McMinnville, Tenn. Car-coupling	Dec. 27, 1870
101,293	Meany, Michael, John McGinnis, and William Cunningham, Brooklyn, N. Y. Cornice-mold	Mar. 29, 1870
103,808	Mearns, Hugh, North Fork, Ky. Bleaching tobacco	Nov. 1, 1870
103,485	Mecay, Samuel P., Kilbourne, Ohio. Horse hay-fork	May 24, 1870
101,294	Medaras, William S. (See Higgins, James, assignor.)	
101,294	Medbery, W. D., Bangor, Me. Press and strainer combined	Mar. 29, 1870
106,710	Mee, Charles, and S. Bentley. (See Bentley & Mee.)	
106,710	Meech, Harrison B., Fort Edward, N. Y. Manufacture of paper-pulp from wood	Aug. 23, 1870
106,711	Same.....Reducing and bleaching paper-stock	Aug. 23, 1870
106,712	Meech, William H., and James B. Slusser. (See Slusser & Meech.)	
106,712	Meehan, James, Covington, Ky. Lubricator	Aug. 23, 1870
101,373	Meeker, William Lewis, and Andrew Jackson Wight. (See Wight & Jackson.)	
101,373	Mefford, David M., Norwalk, Ohio. Preserving vegetables, fruits, &c.	Mar. 29, 1870
106,071	Same.....Machine for grinding hand-saw blades	Aug. 2, 1870
105,107	Mehary, William James, Philadelphia, Pa. Locomotive smoke-stack	July 5, 1870
103,222	Meiggs, George F., assignor to self and Retire C. Sturges, Boston, Mass. Gas-heater	May 17, 1870
104,620	Meigs, Edmund H., assignor to the Roys & Wilcox Company, East Berlin, Conn. Moulders' rammer	June 21, 1870
103,223	Meigs, E. K. (See Richard, William, assignor.)	
103,223	Meigs, Nathan J., assignor to self and E. P. Merriman, West Haven, Conn. Sash-holder	May 17, 1870
103,643	Meigs, Oliver Carpenter, Dubuque, Iowa. Gauge for gang-saws	Nov. 29, 1870
103,502	Meikle, Thomas, Louisville, Ky. Die for swaging wrenches	Oct. 18, 1870
102,847	Meiners, Cornelius, Indianapolis, Ind. Head-block of saw mills	May 10, 1870
105,587	Meissner, Julius H., Pittsburgh, Pa. Base-burning stove	July 19, 1870
103,068	Melcher, Charles, John, Charles H., George W., and William H. (See Scott, George, assignor.)	
103,068	Melendy, Bryant H., Manchester, N. H. Combined door-fastener and key-ring	May 17, 1870
105,474	Same.....Combined key-ring and door-fastener	July 19, 1870
3,899	Mellen, George H., New York, N. Y. Childrens' carriage (Design)	Mar. 15, 1870
101,295	Same.....same	Mar. 29, 1870
103,609	Same.....Meat-chopper	Nov. 1, 1870
105,108	Mellen, Henry H., Boonville, Ind. Saw-filing machine	July 5, 1870
102,294	Mellen, Joshua A., Elisha Van Sandt, Adrian, Mich., and Milton J. Palmer, Syracuse, N. Y., assignors to William Nixon, Elisha Van Sandt, and Milton J. Palmer. Attachment for sewing-machines	April 26, 1870
100,543	Meller, William, assignor to self and Joseph Sutton, McKeesport, Pa. Railroad-car heater	Mar. 8, 1870
103,279	Mellinger, John, Greensburgh, Pa. Harrow	Oct. 11, 1870
110,487	Mellor, James B., New Hope, Mo. Churn-dasher	Dec. 27, 1870
107,519	Mellor, James W., Philadelphia, Pa. Music-leaf turner	Sept. 20, 1870
104,871	Melone, Thomas L., Mount Giload, Ohio. Sewing-machine	June 28, 1870
104,752	Melton, Elijah, Flemingsburgh, Ky. Still for spirits	June 28, 1870
104,977	Same.....Mechanical movement	July 5, 1870
99,217	Menager, Roman. (See Shepard, Calvin A., assignor.)	
109,923	Mendenhall, Noah, Greensburgh, Ind. Seed-planter	Jan. 25, 1870
99,336	Same.....Corn-planter	Dec. 6, 1870
102,026	Mendham, William, Philadelphia, Pa. Paper-folding machine. (Antedated Jan. 15, 1870)	Feb. 1, 1870
161,488	Same.....Bolt-cutter. (Antedated April 4, 1870)	April 19, 1870
104,621	Mendham, William, assignor to Cyrus Chambers, jr., and Edwin Chambers, Philadelphia, Pa. Steam-heating pipe. (Antedated March 29, 1870)	April 5, 1870
104,621	Mendham, William, assignor to Edwin and Cyrus Chambers, jr., Philadelphia, Pa. Paper-folding machine	June 21, 1870
109,034	Mendham, William, and Cyrus Chambers, jr., assignors to Edwin and Cyrus Chambers, jr., Philadelphia, Pa. Brick-machine	Nov. 8, 1870
102,544	Mento, Sante, Alliance, Ohio. Coffee-pot	Mar. 8, 1870
99,455	Meuzer, Frederick, San Francisco, Cal. Extension-bedstead	Feb. 1, 1870
101,489	Same.....same	April 5, 1870
105,475	Meranda, J. P., Springfield, Ohio. Churn	July 19, 1870
105,962	Meredith, Fenton A., Mount Airy, Md. Railway-rail	Aug. 2, 1870
101,753	Meredith, Samuel, assignor to self, John Wood, and C. B. Dodd, Philadelphia, Pa. Railroad-car stove	April 12, 1870
	Meriden Britannia Company. (See Wallace, Robert, assignor.) (Six cases.) (Design.)	
	Same.....(See Wilcox, H. C., assignor.) (Design.)	
	Same.....(See Taylor, Thomas M., assignor.)	
	Merithew, Fitch, et al. (See Woodworth, Brawdy & Merithew.)	
105,963	Merk, Modest, Rochester, N. Y. Fly-trap	Aug. 2, 1870
104,622	Merlett, John, Bonnd Brook, N. J. Method of fastening leads	June 21, 1870
104,181	Merrell, Albert, Cincinnati, Ohio. Percolator for druggists and others	June 14, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Merriam, John O., and Edwin Chamberlin. ( <i>See</i> Morehouse, Charles B., assignor) ..... (Reissue.)	
3,986	Merriam, Joseph D., assignor to Edward W. Vaill, Worcester, Mass. Folding-chair ..... (Reissue.)	May 17, 1870
106,185	Merriam, Joseph P., Sandusky, Ohio. Steam-engine .....	Aug. 9, 1870
108,924	Merriam, Lyman W., Fitchburgh, Mass. Roofing-bracket .....	Nov. 1, 1870
4,502	Merriam, Nelson, West Meriden, Conn. Drawer-pull ..... (Design)	Dec. 6, 1870
101,296	Merrick, E. D., New Brighton, Pa. Fire-place grate .....	Mar. 29, 1870
103,280	Merrick, Harry, Brooklyn, N. Y. Tree-box .....	Oct. 11, 1870
	Merrick, J. V. and W. H. ( <i>See</i> Pollard, Thomas, assignor.)	
	Merrick, Silas, and John Miner. ( <i>See</i> Miner & Merrick) ..... (Two cases.)	
	Merrick, Timothy. ( <i>See</i> Church, D. M., assignor.)	
100,651	Merrick, William H., Philadelphia, Pa. Safety-mechanism for hoisting-apparatus .....	Mar. 8, 1870
105,354	Same.....Preparing paper-pulp for packing and transportation .....	July 12, 1870
	Merrihew, Phineas E. ( <i>See</i> Griswold, John A., assignor.)	
98,983	Merrill, Allen N., Batavia, Ill. Farmers' boiler .....	Jan. 18, 1870
103,639	Same.....same .....	May 31, 1870
4,062	Same.....same ..... (Reissue)	July 5, 1870
106,072	Merrill, Charles L., Watertown, N. Y. Pump .....	Aug. 2, 1870
109,536	Merrill, Helem, Brooklyn, N. Y. Grain-drier .....	Nov. 22, 1870
	Merrill, Herbert S. ( <i>See</i> Whiting, George F., assignor.)	
	Same.....( <i>See</i> Annan, Charles F., assignor) ..... (Two cases.)	
	Same.....same ..... (Design.)	
105,109	Merrill, John F., Cincinnati, Ohio. Fruit-can .....	July 5, 1870
100,652	Merrill, Joshua, Boston, Mass. Compound for stuffing leather .....	Mar. 8, 1870
105,110	Same.....Stave-bender .....	July 5, 1870
103,503	Merrill, Lowell G., Angels, Cal. Mortising-machine .....	Oct. 18, 1870
93,876	Merrill, Milo, Oneida County, N. Y. Hay-knife .....	Jan. 18, 1870
101,754	Merrill, Platt, Port Sanilac, Mich. Saw-clamp .....	April 12, 1870
4,089	Merrill, Rufus S., Hyde Park, Mass. Lamp .....	May 31, 1870
100,653	Merrill, Rufus Spaulding, assignor to self, William B., and Josifua Merrill, Cambridge, Mass. Lamp-burner .....	Mar. 8, 1870
100,915	Same.....Production of light from heavy hydrocarbons .....	Mar. 15, 1870
104,481	Same.....Lamp .....	June 21, 1870
104,623	Same.....same .....	June 21, 1870
104,624	Same.....Lamp-burner .....	June 21, 1870
104,625	Same.....same .....	June 21, 1870
107,277	Same.....Boston, Mass. Lamp .....	Sept. 13, 1870
107,278	Same.....same .....	Sept. 13, 1870
107,279	Same.....Lamp-bracket .....	Sept. 13, 1870
109,537	Same.....Lamp for railroad-cars .....	Nov. 22, 1870
	Merrill, William. ( <i>See</i> Cronin, John, assignor.)	
3,955	Merriman, Anson, New York, N. Y. Brake-wheel ..... (Design)	April 5, 1870
99,218	Merriman, A. T., Chicago, Ill. Stone-planing machine .....	Jan. 25, 1870
	Merriman, E. P. ( <i>See</i> Meigs, Nathan J., assignor.)	
109,035	Merriman, John B., and George B. Lewis; said Lewis assignor to said Merriman, Plantsville, Conn. Animal-trap .....	Nov. 8, 1870
108,810	Merrington, William, and Nathan Kirkwood, McKeesport, Pa. Dumping-car .....	Nov. 1, 1870
103,649	Merritt, Asa P., Charlotte, Mich. Apparatus for painting .....	May 31, 1870
4,403	Merritt, David, Philadelphia, Pa. Inkstand ..... (Design)	Oct. 11, 1870
104,182	Merritt, James C., West Point, N. Y. Bedstead .....	June 14, 1870
105,476	Merritt, Joseph B., Abington, Mass. Wheel-feed .....	July 19, 1870
99,219	Merritt, Samuel, Erie, Pa. Ironing-table .....	Jan. 25, 1870
	Morrow, Joseph B. ( <i>See</i> Burke, Andrew J., assignor.)	
4,304	Merry, John, New York, N. Y. Ash-pail ..... (Design)	Aug. 23, 1870
100,916	Merryman, Philemon, and Robert McCombs, West Fairview, Pa. Puddling process for making wrought iron .....	Mar. 15, 1870
103,224	Mersereau, J. B., deceased, by Sarah E. Mersereau, administratrix, Binghamton, N. Y. Fluting-tongs .....	May 17, 1870
107,941	Mersereau, William T., Orange, N. J. Stair-rod .....	Oct. 4, 1870
98,512	Mervesp, J. Johnson, New York, N. Y. Machine for attaching rivets to buttons .....	Jan. 4, 1870
109,538	Mets, Elisha, and William B. Geddes, Rochester, N. Y. Bedstead-fastening .....	Nov. 22, 1870
	Metz, Henry, <i>et al.</i> ( <i>See</i> Wahler, Metz & Heintzle.)	
106,386	Messenger, Charles, Cleveland, Ohio. Mosquito-net holder .....	Aug. 16, 1870
101,899	Messenger, Levin Albert, Philadelphia, Pa. Paint or coating for ships' bottoms .....	April 12, 1870
	Messerly, Charles. ( <i>See</i> Sinclair, James A., assignor.)	
	Metallic Compression Casting Company. ( <i>See</i> Smith, John Joseph Charles, assignor.)	
	Metallic Compression Casting Company. ( <i>See</i> Smith, John Joseph Charles, assignor) ..... (Ten cases.) (Design.)	
	Same.....( <i>See</i> Kreuzinger, Ludwig, assignor) ..... (Ten cases.) (Design.)	
	Same.....( <i>See</i> Kunze, Charles, assignor) ..... (Design.)	
	Same.....( <i>See</i> Leger, Joseph L., assignor) ..... (Design.)	
	Same.....( <i>See</i> Ruff, Joseph A., assignor) ..... (Twenty cases.) (Design.)	
102,027	Metcalf, David H., and Daniel Squire, assignors to selves and Martin Metcalf, Battle Creek, Mich. Sheet-metal grooving-machine .....	April 19, 1870
107,396	Metcalf, Oliver, Orleans, Ind. Rotating fan and fly-brush .....	Sept. 13, 1870
	Metropolitan Collar Company. ( <i>See</i> Kaufmann, Saloman, assignor.)	
	Meusy, Edward, and Simon Regan. ( <i>See</i> Regan & Meusy.)	
104,978	Mewes, Henry, assignor to John W. Cutler, Binghamton, N. Y. Harvester .....	July 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,111	Mewes, Henry, assignor to John W. Cutler, Binghamton, N. Y. Cutting apparatus for harvesters	July 5, 1870
109,644	Mey, F. H. C., Buffalo, N. Y. Vehicle. (Antedated Sept. 17, 1870)	Nov. 29, 1870
101,900	Meyer, B., Franco. Telegraph-apparatus	April 12, 1870
3,830	Meyer, Charles T., assignor to Edward C. Sampson, Newark, N. J. Carpet-pattern	(Design) Feb. 1, 1870
3,831	Same..... Carpet-pattern	(Design) Feb. 1, 1870
3,832	Same..... same	(Design) Feb. 1, 1870
3,875	Same..... Floor-cloth pattern	(Design) Mar. 1, 1870
3,876	Same..... Floor oil-cloth or carpet-pattern	(Design) Mar. 1, 1870
3,956	Same..... Floor-cloth pattern	(Design) April 5, 1870
3,957	Same..... same	(Design) April 5, 1870
3,958	Same..... same	(Design) April 5, 1870
4,207	Same..... same	(Design) July 5, 1870
4,208	Same..... same	(Design) July 5, 1870
4,209	Same..... same	(Design) July 5, 1870
4,409	Same..... same	(Design) Oct. 11, 1870
4,410	Same..... same	(Design) Oct. 11, 1870
4,434	Same..... Floor oil-cloth pattern	(Design) Nov. 22, 1870
4,485	Same..... same	(Design) Nov. 22, 1870
4,486	Same..... same	(Design) Nov. 22, 1870
102,295	Meyer, Curt W., New York, N. Y. Pocket induction-apparatus	April 26, 1870
98,877	Meyer, F., and Henry Schild, assignors through mesne assignments to Lewis Prentice, New York, N. Y. Cigar-machine. (Antedated Jan. 10, 1870)	Jan. 18, 1870
4,444	Meyer, Jeremiah, assignor to John Jewett & Sons, Kearney, N. J. Floor oil-cloth pattern	(Design) Oct. 25, 1870
101,641	Meyer, L. Otto P., Newtown, Conn. Manufacture of safety-matches	April 5, 1870
	Meyer, Philip, and John Thielemann. (See Thielemann & Meyer.)	
4,210	Meyer, Victor, assignor to Edward C. Sampson, Lansingburgh, N. Y. Floor-cloth pattern	(Design) July 5, 1870
4,222	Meyer, Victor, Lansingburgh, N. Y., and Charles T., Newark, N. J., assignors to Edward C. Sampson. Floor-cloth pattern	(Design) July 12, 1870
4,168	Meyers, Fred J., Covington, Ky. Dog-muzzle	(Design) June 21, 1870
99,783	Meyers, Nicholas, assignor to Globe Sewing-Machine Company, Buffalo, N. Y. Sewing-machine	Feb. 15, 1870
3,994	Same..... same	(Reissue) May 24, 1870
107,520	Meyers, William M., New Brunswick, N. J. Corn-planter	Sept. 20, 1870
101,146	Michael, George L., Farmersville, Ohio. Meat-safe	Mar. 22, 1870
98,609	Michael, J. D., Baltimore, Md. Egg-box	Jan. 4, 1870
103,910	Michael, William, Murrysburg, Pa. Clutch-mechanism for harvesters	June 7, 1870
	Michigan Bolt and Nut Company. (See Scully, William, assignor.)	
104,333	Mickel, Peter, Milford, N. Y. Drier	June 14, 1870
103,762	Mickel, William, assignor to James T. Marble, Theodore P. and Lester S. Emmons, Oneonta, N. Y. Machinery for making barrel-heads	May 31, 1870
109,831	Mickley, Jacob, and John E. Hartman, Cashtown, Pa. Sausage-stuffer	Dec. 6, 1870
109,832	Same..... Wagon-brake	Dec. 6, 1870
107,280	Mickley, Solomon, assignor to self and Samuel Leathery, York, Pa. Corn-planter	Sept. 13, 1870
106,387	Middlebrook, Alexander, assignor to self and John B. Ruthvin, Glasgow, Mo. Guide for circular saws	Aug. 16, 1870
109,924	Middlekauff, Samuel S., Hagerstown, Md. Washing-machine	Dec. 6, 1870
107,942	Middleton, John W., Philadelphia, Pa. Manufacture of purified cast iron from the ore. (Antedated Sept. 24, 1870)	Oct. 4, 1870
198,375	Same..... Producing castings direct from the blast-furnace. (Antedated Oct. 8, 1870)	Oct. 18, 1870
101,901	Middleton, William A., Harrisburgh, Pa. Broom-head	April 12, 1870
105,825	Same..... Hand corn-sheller	July 26, 1870
108,925	Same..... Fence	Nov. 1, 1870
	Same..... (See Reisinger, George W., assignor.)	
	Middleton, William A., and William P. Patton. (See Patton & Middleton.)	
	Middleton, William A., and Eugene Snyder. (See Reisinger, George W., assignor.)	
108,926	Middleton, William R., Cleveland, Ohio. Machine for separating middlings	Nov. 1, 1870
102,296	Mignot, Paul, New York, N. Y. Frame for passe-partouts	April 26, 1870
109,036	Mihills, Uriah D., Fond du Lac, Wis. Fence	Nov. 8, 1870
99,220	Milbank, George, Chillicothe, Ohio. Steam-engine governor cut-off. (Antedated Jan. 14, 1870)	Jan. 25, 1870
103,641	Milbank, Isaac M., Greenfield, Conn. Primer for cartridges	May 31, 1870
105,709	Milburn, Robert, and Thomas Browning, Great Britain. Grain-drier	July 26, 1870
	Mileham, Joseph N., et al. (See Hyatt, Charles, assignor.)	
	Miles Alarm-Till Manufacturing Company. (See Baldwin, John F., assignor.)	
	Miles, Frederick B., and Oscar C. Ferris. (See Ferris and Miles.)	
104,482	Miles, Jesse C., Bloomington, Wis. Harvester	June 21, 1870
104,183	Miles, Purches, New York, N. Y. Double-pointed tack	June 14, 1870
104,184	Same..... Machine for making double-pointed tacks	June 14, 1870
108,376	Milhollin, Jonathan M., Champlin, Minn. Weather-board gauges	Oct. 18, 1870
109,545	Mill, George B., Buffalo, N. Y. Meat-pounder, block, and chopping-bowl	Mar. 8, 1870
102,028	Millar, Henry W., Utica, N. Y. Agricultural steamer	April 19, 1870
103,763	Same..... Ratchet-lever	May 31, 1870
109,140	Same..... Cheese-vat	Nov. 8, 1870
4,461	Millar, John, Paterson, N. J. Rustic fence	(Design) Nov. 8, 1870
107,281	Millard, Alonzo D., Canton, Ohio. Sash-holder	Sept. 13, 1870
109,925	Millard, Mordecai, Franklin, Ohio. Water-wheel. (Antedated Nov. 26, 1870)	Dec. 6, 1870
	Miller, A. (See Raymond, Fitch, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,826	Miller, Aaron H. ( <i>See</i> Boyd, James P., assignor.) Miller, Abraham, and Uriah Faris, Red Rock Township, Iowa. Weather-board scribe ..... Same. .... ( <i>See</i> Faris & Miller.)	July 26, 1870
107,282	Miller, Benjamin F. and Joseph G., New York, N. Y. Chimney-cap .....	Sept. 13, 1870
102,848	Miller, Carl, Sandoval, Ill. Self-packing bush for spindles .....	May 10, 1870
103,477	Miller, Charles A., Marengo Township, Mich. Hay elevator and conveyor.....	July 19, 1870
104,753	Miller, Charles G., Brattleborough, Vt. Carpenters' plane.....	June 28, 1870
98,700	Miller, Charles G., deceased, by Christina Julia Miller, administratrix; and Benjamin Kersting, assignor of one-half interest to George W. Hoglin and S. D. Grafflin, Springfield, Ohio. Harvester.....	June 11, 1870
101,642	Miller, Charles H., Buffalo, N. Y. Hame-fastener. (Antedated April 1, 1870)....	April 5, 1870
103,069	Miller, Charles H., assignor to self and Michael Doll, Buffalo, N. Y. Cord-tension device for window-shades .....	May 17, 1870
105,827	Same. .... Wrench .....	July 26, 1870
105,964	Miller, Charles H., assignor to self and Emory Cummings, Buffalo, N. Y. Means for communicating motion to machinery.....	Aug. 2, 1870
105,230	Miller, Daniel J., assignor of one-half interest to Fielding Beeler, Indianapolis, Ind. Flood-fence .....	July 12, 1870
105,710	Miller, Daniel K., Reading, Pa. Padlock. (Antedated July 22, 1870).....	July 26, 1870
106,186	Miller, Edgar T., assignor to self and John Hewitt, Albany, N. Y. Metallic heel for boots and shoes .....	Aug. 9, 1870
100,052	Miller, Edward, Milwaukee, Wis. Dumping-wagon. (Antedated Feb. 11, 1870). Miller, Edward L., and George A. Smith. ( <i>See</i> Smith & Miller.)	Feb. 22, 1870
101,755	Miller, Ezra, New York, N. Y. Railway-car seat .....	April 12, 1870
105,965	Same. .... Car-seat lock .....	Aug. 2, 1870
108,504	Same. .... Medicine .....	Oct. 18, 1870
	Same. .... ( <i>See</i> Armstrong, William, assignor.)	
	Miller, E., & Co. ( <i>See</i> Marcy, J. J., assignor)..... (Two cases.)	
103,764	Miller, Gardner C., Rockford, Ill. Hand-punching machine.....	May 31, 1870
100,175	Miller, George, Johnston, R. I. Grinder or rattler for cleaning castings.....	Feb. 22, 1870
105,711	Same. .... Providence, R. I. Grinder for cleaning castings.....	July 23, 1870
105,712	Same. .... Water-wheel .....	July 26, 1870
108,505	Miller, George and Charles B., Philadelphia, Pa. Manufacture of confectionery.	Oct. 18, 1870
100,782	Miller, George C., Goshen, N. Y., and Joseph H. Coates, New York, N. Y. Basin with waste-pipe attachment .....	Mar. 15, 1870
102,956	Miller, George H., Leavenworth, Kans. Hot-air furnace.....	May 10, 1870
103,377	Miller, George H., Dyersburgh, Tenn. Combined tool .....	Oct. 18, 1870
	Miller, George W., and Joseph Banigan. ( <i>See</i> Banigan & Miller.)	
	Miller, George Y. ( <i>See</i> Mosher, Levi P., assignor.)	
	Miller, H. ( <i>See</i> Hale, William P., assignor.)	
102,573	Miller, Henry, Johnston, R. I. Bird-house.....	May 3, 1870
	Miller, Henry P., and Francis M. Patterson. ( <i>See</i> Patterson & Miller.)	
105,713	Miller, Herman, New York, N. Y. Tap-nozzle for cans .....	July 26, 1870
3,993	Miller, Herman, assignor to the Devoe Manufacturing Company, Hoboken, N. J. Can for paint, fruit, &c .....	May 24, 1870
105,828	Miller, Isaac, Worcester, Mass. Cultivator.....	July 26, 1870
	Miller, I. L., et al. ( <i>See</i> Huntsman, E. N., assignor.)	
105,231	Miller, Jacob, and William H. B. Flender, Washington, Pa. Combined fender and fire-screen .....	July 12, 1870
	Miller, James M., assignor through mesne assignments to D. D. Foley, Washington, D. C. Surface-condenser for steam-engines..... (Extension)....	May 19, 1870
108,231	Miller, John, Elbridge, Ill. Loom .....	Oct. 11, 1870
101,643	Miller, John, Youngstown, Ohio. Washing-machine.....	April 5, 1870
108,927	Miller, John, jr., Marshalltown, Iowa. Lock-nut .....	Nov. 1, 1870
99,693	Miller, John C., Danville, Ky. Revolving fire-arm.....	Feb. 8, 1870
109,234	Miller, John P., Somerville, N. J. Drier .....	Nov. 15, 1870
105,355	Miller, Jonathan J., McAlavey's Fort, Pa. Applying measurements to and laying out garments.....	July 12, 1870
104,979	Miller, Joseph A., New York, N. Y. Steam-generator .....	July 5, 1870
106,338	Same. .... same .....	Aug. 16, 1870
109,645	Same. .... Boston, Mass. Steam-generator.....	Nov. 29, 1870
105,356	Miller, Lebbens A., Sewickleyville, Pa. Envelope-opener .....	July 12, 1870
	Miller, Levi E. ( <i>See</i> Eshleman, Jefferson, assignor.)	
107,190	Miller, Luke H., Baltimore, Md. Permutation-lock.....	Sept. 6, 1870
103,911	Miller, Mahlon, Cleveland, Ohio. Iron bridge.....	June 7, 1870
107,076	Miller, Michael, assignor to self and William Hewson, Buffalo, N. Y. Buck-board wagon.....	Sept. 6, 1870
99,337	Miller, Nathaniel C., Stroudsburg, Pa. Egg-beater.....	Feb. 1, 1870
	Miller, Philip. ( <i>See</i> Hays, Joseph S., assignor.)	
106,603	Miller, Reuben, Pittsburgh, Pa. Machine for bending volute-springs.....	Aug. 23, 1870
102,297	Miller, Robert A., assignor to self and Joseph C. Skinner, Boston, Mass. Boot and shoe .....	April 26, 1870
98,610	Miller, R. R., Plantsville, Conn. Die for forming carriage-shackles .....	Jan. 4, 1870
100,783	Same. .... Die for forming perch-plates .....	Mar. 15, 1870
100,053	Miller, Robert R., assignor to self and J. B. Savage, Plantsville, Conn. Series of dies for forming the heads of bolts.....	Feb. 22, 1870
100,176	Miller, Robert R., assignor of one-half interest to J. B. Savage, Plantsville, Conn. Jack for carriage-springs .....	Feb. 22, 1870
100,177	Same. .... Fifth-wheel head for carriages.....	Feb. 22, 1870
100,546	Miller, Samuel, Mount Union, Pa. Press for hay, cotton, &c .....	Mar. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Miller, Thomas, <i>et al.</i> (See Wiley, Moses H., assignor.)	
	Same.....same.....(Reissue.)	
	Miller, Thomas, and Moses H. Wiley. (See Wiley & Miller.)	
	Miller, Thomas Ferguson. (See Ceredo, Paul, assignor.)	
104,185	Miller, Warren, Granger, Ohio. Horse and cattle poke.....	June 14, 1870
99,932	Miller, William, Boston, Mass. Weather-strip.....	Feb. 15, 1870
107,077	Same.....Fire-escape.....	Sept. 6, 1870
110,263	Same.....Clothes-pin.....	Dec. 20, 1870
3,922	Miller, William, Cincinnati, Ohio. Hoisting-machine.....(Reissue)	April 19, 1870
105,232	Miller, William, Chicopee, Mass. Weather-strip.....	July 12, 1870
3,902	Miller, William, assignor to James Edgar, Newark, N. J. Coal-scuttle. (Re-issue)	April 5, 1870
103,352	Miller, William H. and George W., Meriden, Conn. Pocket cutlery.....	May 24, 1870
106,073	Same.....Manufacture of blades of pocket-cutlery.....	Aug. 2, 1870
	Miller, W. J. (See Loud, Alfred C., assignor.)	
	Miller, William K., and Clement Russell. (See Russell & Miller.)	
108,716	Miller, William T., New Geneva, Pa. Harvester.....	Oct. 25, 1870
104,483	Miller, William W., Zionsville, Ind. Harvester-rake.....	June 21, 1870
	Miller's Falls Manufacturing Company. (See Horton, James M., assignor.) (Re-issue.)	
110,151	Millett, Thomas M., sr., Savannah, Ga. Gearing for machinery.....	Dec. 13, 1870
100,917	Millbolland, James, Reading, Pa. Railway-rail.....	Mar. 15, 1870
104,051	Milligan, Henry C., Brooklyn, N. Y. Handle of sheet-metal spoons, forks, &c.....	June 7, 1870
101,490	Milligan, John C., Brooklyn, N. Y. Biscuit-pan.....	April 5, 1870
105,966	Same.....Coffee-mill.....	Aug. 2, 1870
107,521	Same.....Milk-can.....	Sept. 20, 1870
109,748	Milligan, John F., assignor to Joseph W. Branch, St. Louis, Mo. Cotton-bale tie.	Nov. 29, 1870
	Milligan, Thomas P., and Thomas Higgins. (See Goddard, Emerson, assignor.) (Reissue.)	
3,785	Milliken, James, <i>et al.</i> (See Whitmore, Seth H., assignor.) (Two cases).....	
	Milliken, William H. and John, assignors through mesne assignments to S. C. Forsaith, Manchester, N. H. Paper-folding machine. (Division A, reissue)	Jan. 4, 1870
3,786	Same.....Combining paper-folding machines with printing-presses. (Division B, reissue)	Jan. 4, 1870
108,040	Milliman, William F., assignor to Henry Disston & Son, Philadelphia, Pa. Saw	Oct. 4, 1870
105,112	Millingar, James, assignor to self, Thomas Woods, and Benjamin F. Pine, Philadelphia, Pa. Machine for making sheet-lead.....	July 5, 1870
4,495	Million, John T., Fayette, Mo. Saddle-tree.....(Design)	Nov. 29, 1870
109,334	Milliorn, George, assignor to self and P. T. Raiford, Pyhalia, Miss. Corn and cotton scraper.....	Nov. 15, 1870
101,297	Mills, Anson, U. S. Army. Bayonet.....	Mar. 29, 1870
101,644	Mills, Daniel, New York, N. Y. Sewing-machine for boots and shoes.....	April 5, 1870
	Mills, David, and Charles G. Harrington. (See Harrington & Mills.)	
106,949	Mills, Francis, Mount Vernon, Ind. Revolving grain-screen.....	Aug. 30, 1870
107,078	Mills, Francis E., San Francisco, Cal. Reaction rotary steam-engine. (Antedated Aug. 26, 1870).....	Sept. 6, 1870
	Mills, George E., and Ransom Bullard. (See Bullard & Mills.)	
100,310	Mills, George S., Johnson, Vt. Fence.....	Mar. 1, 1870
	Mills, Ipswich. (See Pepper, John, assignor.)	
108,811	Mills, John J., and William Perry, Frederick's Hall, Va. Medicine or pain-remedy.....	Nov. 1, 1870
100,054	Mills, Jonathan, and A. G. Waldo, Milwaukee, Wis. Smut-mill and grain-separator.....	Feb. 22, 1870
100,784	Same.....Circular-saw mill. (Antedated Feb. 28, 1870).....	Mar. 15, 1870
106,604	Mills, Joseph, Milan, Ind. Horse hay-rake.....	Aug. 23, 1870
	Mills, Lucien, and Alonzo T. Boon. (See Boon & Mills.)	
100,918	Mills, Thomas and George M., Philadelphia, Pa. Ice-cream freezer.....	Mar. 15, 1870
	Mills, William F., <i>et al.</i> (See Davis, Biram C., assignor.)	
106,389	Millward, Joseph, Fayetteville, N. Y. Carbureting-apparatus.....	Aug. 16, 1870
107,191	Milne, David, Norwich, N. Y. Gas-fixture.....	Sept. 6, 1870
101,293	Milner, Edward, Marquette, Mich. Sleigh-bench.....	Mar. 29, 1870
104,626	Same.....Spring-sulky.....	June 21, 1870
105,714	Same.....Metallic standard for wagon-boxes.....	July 26, 1870
105,113	Milward, Victor, assignor to Henry Milward, England. Needle-wrapper.....	July 5, 1870
107,397	Minderle, Damian, St. Louis, Mo. Scrubbing-brush.....	Sept. 13, 1870
	Miner, Harvey, and Henry M. Stevens, New York, N. Y., and William H. Saunders, deceased, by Mary Saunders, executrix, Hastings, N. Y. Coupling for vehicles.....(Extension)	May 23, 1870
102,143	Miner, Henry, assignor of one-half interest to Louis Harter, Green Island, N. Y. Stove-grate.....	April 19, 1870
104,754	Miner, James G., Nashville, Tenn. Plow-cultivator.....	June 28, 1870
105,357	Miner, John, and Silas Merrick, New Brighton, Pa. Railway splice and nut-lock.....	July 12, 1870
109,141	Same.....Railway-switch.....	Nov. 8, 1870
	Minotree, Joseph P., <i>et al.</i> (See Robinett, James T., assignor.)	
4,436	Mingis, Walter S., New York, N. Y. Head-band.....(Design)	Oct. 25, 1870
103,642	Mingus, Gideon W., Pomeroy, Ohio. Bolt-threader.....	May 31, 1870
4,353	Minnemeyer, Henry W., Allegheny City, Pa. Breast-slide for harness. (Design)	Sept. 13, 1870
100,311	Minnick, Simon B., Landisville, Pa. Manure-hook.....	Mar. 1, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,702	Minniss, Thomas S., Meadville, Pa. Friction-locomotive. (Antedated September 17, 1870).....	Sept. 27, 1870
107,703	Same..... Grain-binding attachment for harvesters. (Antedated Sept. 17, 1870).....	Sept. 27, 1870
	Minshall, William, and Isaac Hudson. (See Hudson & Minshall.)	
	Mischö, Hermann, and Philip Norden. (See Norden & Mischö.)	
102,029	Mishler, Abel, New York, N. Y. Door-spring.....	April 19, 1870
	Miskey, Merrill & Thackara. (See Thackara, Benjamin, assignor).... (Design.)	
105,967	Misner, William H., and George E. Marker, Heyworth, Ill. Hay-rake. (Antedated July 22, 1870).....	Aug. 2, 1870
100,919	Mitchel, David, New Berlin, Pa. Fence.....	Mar. 15, 1870
	Mitchell, Charles M. (See Blake, William H., assignor.)	
104,484	Mitchell, David E., Rural Dale, Ohio. Double-lever master-wheel.....	June 21, 1870
	Mitchell, Ernest. (See Taft, Owen W., assignor.)	
105,588	Mitchell, George, Trenton, N. J. Vise.....	July 19, 1870
104,980	Mitchell, Gove, Philadelphia, Pa. Dredging-machine.....	July 5, 1870
106,271	Same..... Grinding-mill.....	Aug. 9, 1870
	Mitchell, Henry R. (See Tate, William J., assignor.)	
	Mitchell, James, and T. Rice Smith. (See Smith & Mitchell.)	
105,478	Mitchell, Joseph, assignor to William Edward Newton, England. Railway-car spring. (Patented in England May 13, 1868).....	July 19, 1870
103,912	Mitchell, Joseph E., Philadelphia, Pa. Machine for cutting out grindstones....	June 7, 1870
106,605	Mitchell, Richard, Smyrna, Del. Fruit-basket.....	Aug. 23, 1870
107,079	Mitchell, Robert B., Chicago, Ill. Kerosene-stove.....	Sept. 6, 1870
104,334	Mitchell, Samuel H., El Paso, Ill. Cultivator.....	June 14, 1870
101,374	Mitchell, Thomas A., assignor to self and Daniel Breed, Washington, D. C. Carpet-tack.....	Mar. 29, 1870
103,913	Mitchell, Thomas M., Philadelphia, Pa. Fuel-press.....	June 7, 1870
106,187	Mitzelfeld, Charles, assignor to self and Mark Flanigan, Detroit, Mich. Saw....	Aug. 9, 1870
98,513	Mix, E. M., and J. E., Westfield, N. Y. Indicator-lock. (Antedated July 27, 1869).....	Jan. 4, 1870
	Modena Hat Company. (See Loewenberg, Henry, assignor.)	
	Moen, Augustus R., deceased, by Sophia A. Moen, Stamford, Conn., and Philip L. Moen, Worcester, Mass., administrators. Mode of constructing walls and floors of cellars..... (Extension).....	Sept. 14, 1870
102,144	Moffat, David, and John Thomson, Philadelphia, Pa. Paving-brick.....	April 19, 1870
4,075	Moffatt, Arthur, Washington, D. C. Priming-cartridges.. (Division 1, reissue)...	July 19, 1870
4,076	Same..... same..... (Division 2, reissue).....	July 19, 1870
108,616	Moff, Charles A., Indianapolis, Ind. Drier.....	Oct. 25, 1870
	Moffatt, Edgar R. (See Richards, Stephen M., assignor.)	
101,299	Moffatt, G. J., Brooklyn, N. Y. Machine for folding paper bags.....	Mar. 29, 1870
110,264	Moffatt, Richard R., Brooklyn, N. Y. Cartridge.....	Dec. 20, 1870
110,265	Same..... Metallic cartridge.....	Dec. 20, 1870
116,266	Same..... Percussion-primer for cartridges.....	Dec. 20, 1870
110,267	Same..... Bobbin-winding and needle-sharpening attachment for sewing-machines.....	Dec. 20, 1870
110,268	Same..... Mode of applying motive power to machinery.....	Dec. 20, 1870
110,383	Same..... Shot-cartridge.....	Dec. 20, 1870
106,497	Möhr, Hermann, New York, N. Y. Steam-engine.....	Aug. 16, 1870
	Moll, Charles Frederick, and James Alanson Loomis. (See Loomis & Moll.)	
105,968	Moll, Conrad F., Kenton, Ohio. Manufacture of pure carbonate of potash.....	Aug. 2, 1870
	Moll, Gustar H., and Conrad Krath. (See Krath & Moll.)	
	Moll, Michael, et al. (See Reece, William R., assignor.)	
110,488	Moller, William, Irvington, N. Y. Filter-tank and other vessels used in refining sirups, sugar, &c.....	Dec. 27, 1870
103,070	Moltz, Adam, New York, N. Y. Sewing-machine.....	May 17, 1870
109,235	Monaghan, John, Tuckahoe, N. Y. Match-box.....	Nov. 15, 1870
105,829	Monce, James H., New York, N. Y. Awning for cars, &c.....	July 26, 1870
167,080	Same..... Folding coat and hat rack.....	Sept. 6, 1870
3,800	Moncuse, Elic, and Louis Duparquet, New York, N. Y. Stove-grate. (Reissue)...	Jan. 18, 1870
107,081	Money, David Smith, Valdosta, Ga. Rotating-engine.....	Sept. 6, 1870
106,390	Monfort, Oscar F., Dearborn, Mich. Tile-cutting machine.....	Aug. 16, 1870
102,298	Mongene, Joseph, Vincennes, Ind. Fruit-drier.....	April 26, 1870
100,547	Monroe, Halsey H., Thomaston, Maine. Revolving-harrow.....	Mar. 8, 1870
108,717	Monroe, Isaac N., Bridgeport, Ill. Corn-coverer.....	Oct. 25, 1870
103,071	Monroe, Nathaniel, assignor to self, William T. Keen, and Charles P. Stowe, Boston, Mass. Packing for the journal-boxes of railroad-cars.....	May 17, 1870
109,926	Monroe, Ransom, Hendrick's Creek, Pa. Turbine water-wheel.....	Dec. 6, 1870
	Monson, Benjamin F., and Alfred Ray. (See Ray & Monson.)	
	Monson, Charles. (See Bristol, Truman, assignor.)	
104,335	Monson, Christian, Moscow, Wis. Auger.....	June 14, 1870
104,052	Monson, Mads C., Chicago, Ill. Tubing and filtering arrangement for wells....	June 7, 1870
98,611	Montague, Charles, assignor to Cyril C. Child, Boston, Mass. Paper-cutting machine.....	Jan. 4, 1870
104,627	Montague, George Threlkeld, Keokuk, Iowa. Churn-power.....	June 21, 1870
99,221	Montgomery, James, New York, N. Y. Rolling-mill.....	Jan. 25, 1870
99,456	Same..... Sing Sing, N. Y. Metallurgic furnace.....	Feb. 1, 1870
100,055	Same..... New York, N. Y. Spike for railways.....	Feb. 22, 1870
102,849	Same..... Apparatus for corrugating metal.....	May 10, 1870
103,072	Same..... Conductor for telegraphs. (Antedated April 30, 1870).....	May 17, 1870
102,718	Same..... Steam-engine.....	Oct. 25, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,353	Montgomery, James, Marseilles, Ill. Curtain-fixture .....	May 24, 1870
98,612	Montgomery, John, Union City, Ind. Bee-hive .....	Jan. 4, 1870
106,713	Montgomery, Richard, New York, N. Y. Form of ingot for corrugated-metal beams .....	Aug. 23, 1870
107,798	Same..... Railway-rail .....	Sept. 27, 1870
103,165	Same..... Pile for corrugated beams .....	Oct. 11, 1870
4,172	Same..... Corrugated-iron bridge .....	Nov. 1, 1870
102,145	Montgomery, William, Northampton, Mass. Picker-check for looms .....	April 19, 1870
4,236	Montross, Isaac T., Peckskill, N. Y. Stove .....	July 19, 1870
105,358	Moody, Joseph B., Louisville, Ky. Cultivator .....	July 12, 1870
98,701	Moore, Thomas J., Blossburgh, Pa. Car-axle lubricator .....	Jan. 11, 1870
107,192	Same..... Lubricator .....	Sept. 6, 1870
102,030	Moog, Julius, assignor to Emil Heusner, Germany. Method of treating tracing-paper .....	April 19, 1870
103,354	Moon, Amos S., and George W. Darby. (See Darby & Moon.) .....	May 24, 1870
107,398	Moon, Frank, Newberry Court-House, S. C. Stove-leg fastener .....	Sept. 13, 1870
103,643	Mooney, John H., San Francisco, Cal. Device for securing covers upon sewing-machines .....	May 31, 1870
4,199	Mooney, John H., assignor to Samuel Hill, San Francisco, Cal. Tension-wheel for sewing-machines .....	May 31, 1870
108,719	Mooney, Samuel L., et al. (See Sinclair, James A., assignor.) .....	Dec. 13, 1870
103,355	Moore, A. C., assignor to Levi J. Gunn and Charles H. Amidon, Greenfield, Mass. Bit-stock .....	Oct. 25, 1870
107,283	Moore, Albert W., East Brimfield, Mass. Peg-box for pegging-machines .....	May 24, 1870
102,574	Moore, Alfred L. D., Lagrange, Texas. Ox-bow .....	Sept. 13, 1870
110,062	Moore, Charles A., Akron, Ohio. Carriage-pole coupling .....	May 3, 1870
107,082	Moore, Charles A., Westbrook, Conn. Manufacture of glass articles .....	Mar. 29, 1870
109,646	Moore, Charles C., New York, N. Y. Cord-catch .....	Sept. 13, 1870
102,575	Moore, Charles D., Gilmanston, N. H. Saw-mill .....	Feb. 8, 1870
101,300	Moore, Charles E., Boston, Mass., and Martin L. Wyman, Melrose, Mass. Machine for making paper collars .....	Jan. 18, 1870
107,399	Moore, Charles T., et al. (See Fickett, Albert, assignor.) .....	May 10, 1870
99,694	Moore, Daniel, Davenport, Iowa. Oven .....	Mar. 22, 1870
98,989	Moore, Daniel O., and Frank Reid, Everton, Ind. Clod-fender .....	Nov. 15, 1870
102,957	Moore, David M., assignor to Ebenezer G. Lamson, Windsor, Vt. Universal square .....	April 26, 1870
3,917	Moore, Edward C., assignor to Tiffany & Company, Yonkers, N. Y. Handle for spoons .....	Jan. 25, 1870
4,476	Same..... Spoon and fork handle .....	Feb. 22, 1870
3,994	Moore, Edwin, assignor to the Bissell & Moore Manufacturing Company, Brooklyn, E. D., N. Y. Shape of the slots between saw-teeth .....	June 7, 1870
99,100	Moore, George. (See Chamberlain, Orange M., assignor.) .....	Mar. 29, 1870
100,056	Moore, George R., Philadelphia, Pa. Coal-stove .....	April 5, 1870
104,053	Same..... Balance slide-valve .....	July 26, 1870
101,645	Moore, Hiram W., Jersey City, N. J. Car-wheel .....	Jan. 18, 1870
101,375	Moore, James, Ireland. Heating-stove .....	June 7, 1870
105,830	Same..... Fire-place .....	Sept. 20, 1870
98,990	Moore, J. A., et al. (See Eiberweiser, John, assignor.) .....	July 5, 1870
104,054	Moore, James C., Philadelphia, Pa. Thawing device for hydrants and fire-plugs. (Antedated July 16, 1870) .....	Jan. 4, 1870
101,902	Moore, James L., and Charles Coester, jr. (See Coester & Moore.) .....	Nov. 29, 1870
102,850	Moore, J. W., Watseka, Ill. Runner-attachment for carriages .....	July 5, 1870
100,785	Moore, John W., Bellefonte, Pa. Photographic plate-holder .....	Sept. 6, 1870
105,589	Moore, Leon Eugene Cameron, and James Shockey Hamilton, Pittston, Pa. Lamp .....	Aug. 16, 1870
107,522	Moore, Samuel J., and George A. Buckman, Ogdensburgh, N. Y. Tool for making slides for extension-tables .....	Oct. 4, 1870
105,114	Moore, Stephen, et al. (See Houghton, Moore & Rogers.) .....	July 12, 1870
98,514	Moore, Thomas, Brooklyn, N. Y. Governor for steam-engines .....	Mar. 22, 1870
109,647	Moore, Thomas, Bloomfield, Ill. Vapor-burner .....	Mar. 15, 1870
105,115	Moore, Thomas C., assignor to self and Joshua G. Wickersham, Dublin, Ind. Harvester-dropper .....	July 19, 1870
107,083	Moore, Thomas E., Columbus, Ohio. Paper-file .....	Sept. 20, 1870
107,084	Moore, T. G., Albia, Iowa. Leather-fastening for harness .....	July 5, 1870
106,391	Moore, W. G. (See Lane, Rufus, assignor.) .....	Jan. 4, 1870
107,943	Moore, William N. and Alexander K., Neenah, Wis. Clothes-drier .....	Nov. 29, 1870
4,071	Moorhead, Francis R., Chandlersville, Ohio. Safety-valve for dental vulcanizers .....	July 5, 1870
101,147	Morange, James K. and Napoleon B., Pittsburg, Pa. Construction of car-wheels .....	Sept. 6, 1870
	More, Ezekiel P., and Samuel J. Anderson, Cazenovia, N. Y. Folding-chair .....	Sept. 6, 1870
	More, John, New York, N. Y. Veneering-press .....	Aug. 16, 1870
	Same..... Cutter-head for planers .....	Oct. 4, 1870
	Morehesse, Joel E. (See Burdick, Welcome J., assignor.) .....	July 12, 1870
	Morehouse, Charles B., assignor to John O. Merriam and Edwin Chamberlin, Troy, N. Y. Whip-socket .....	Mar. 22, 1870
	Morehouse, Clark, assignor to Seth A. Tozer and Oscar N. Crane, Wayland, N. Y. Hemmer for sewing-machines .....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued*

No.	Name, residence, and invention or discovery.	Date.
101,376	Morehouse, Moses, Boscobel, Wis. Bed-bottom .....	Mar. 29, 1870
110,384	Morehouse, William, Buffalo, N. Y. Railway-rail joint .....	Dec. 20, 1870
	Morekess, Joel, <i>et al.</i> (See West, Thomas J., assignor.)	
105,831	Moreland, Henry J., Whitehall, Ill. Washing-machine .....	July 26, 1870
105,969	Morelock, Jeremiah A., Silver Run, Md. Washing-machine .....	Aug. 2, 1870
102,851	Morf, Ferdinand, Switzerland. Mechanism for stripping the top flats of card- ing-machines .....	May 10, 1870
106,851	Moritt, Campbell, New York, N. Y. Treatment of guano for the manufacture of fertilizers .....	Aug. 30, 1870
103,812	Morgan, Edward L., Riversville, W. Va. Sewing-machine table .....	Nov. 1, 1870
	Morgan, Eustis P., and William H. Thompson. (See Thompson & Morgan.)	
105,359	Morgan, George, Brooklyn, N. Y. Stone-sawing machine .....	July 12, 1870
104,186	Morgan, James, Pittsburgh, Pa. Machine for making harrow-teeth .....	June 14, 1870
99,457	Morgan, J., and William Cline, jr., Clayton, Ind. Horse hay-rake. (Antedated Jan. 24, 1870) .....	Feb. 1, 1870
109,335	Morgan, Jarvis A., Navasink, N. J. Water-wheel .....	Nov. 15, 1870
102,418	Morgan, John, jr., Wheeling, W. Va. Bolt and rivet machine .....	April 26, 1870
108,166	Morgan, Joseph, New York, N. Y. Trunk-lock. (Antedated Sept. 24, 1870) .....	Oct. 11, 1870
104,628	Morgan, Thomas, Marquette, Mich. Bolster-plate .....	June 21, 1870
107,085	Morgan, William H., assignor to self and Richard B. Geyer, Alliance, Ohio. Trace-hook .....	Sept. 6, 1870
107,086	Same.....Trace-hook and clip for harness .....	Sept. 6, 1870
107,087	Same.....Harness-hook and loop-shield .....	Sept. 6, 1870
99,101	Morgans, William T., assignor to self, G. J. Coleman, and C. H. Sedgwick & Son, Youngsville, N. Y. Printing-press .....	Jan. 25, 1870
108,813	Morgans, William T., assignor to self and Isaac Anderson, Youngsville, N. Y. Machine for preparing stereotype matrices .....	Nov. 1, 1870
109,833	Morgencier, Johan Wolfgang, Sheboygan, Wis. Varnish for coating photo- graphic negatives .....	Dec. 6, 1870
105,360	Morgenstern, William, New York, N. Y. Faucet .....	July 12, 1870
108,506	Morgenstern, William, assignor to self and Franz Otto, New York, N. Y. Bot- tle-stopper .....	Oct. 18, 1870
	Morison, G. S., and O. Chanute. (See Chanute & Morison.)	
103,073	Morley, Franklin A., Syracuse, N. Y. Torch-light .....	May 17, 1870
107,206	Same.....Steam and vapor engine .....	Sept. 6, 1870
107,523	Same.....Evaporating salt-water and other liquids .....	Sept. 20, 1870
99,458	Morlot, J. P., France. Hat-shaping machine .....	Feb. 1, 1870
	Morningstave, William. (See Hartmann, Joachim F., assignor.)	
101,756	Morrell, Albert W., Niles, Mich. Feed-water regulator and low-water alarm .....	April 12, 1870
107,524	Morrell, Albert W., assignor of one-half interest to Perley Hale, jr., Niles, Mich. Double-piston engine .....	Sept. 20, 1870
110,063	Morrill, Charles, New York, N. Y. Truss .....	Dec. 13, 1870
101,148	Morrill, Robert M., Plymouth, Ind. Sand-screen for iron tube-wells .....	Mar. 22, 1870
	Morrill, Samuel, Andover, N. H. Clothes-drier.....(Extension) .....	Oct. 27, 1870
4,262	Morris, Almon T., Nevada, Ohio. Corn-husker .....	July 26, 1870
98,613	Morris, C. R., and H. W. Franklin, Bridgeport, Conn. Safety railway-truck .....	Jan. 4, 1870
107,705	Morris, David, Bunker Hill, Ill. Plow .....	Sept. 27, 1870
103,486	Morris, David, assignor to Knowles & Brooker, Cutler, Ohio. Clothes-drier .....	May 24, 1870
	Morris, David, and William H. McMillan. (See McMillan & Morris.)	
106,392	Morris, David A., New York, N. Y. Steam-generator .....	Aug. 16, 1870
106,188	Morris, David G., Catasaqua, Pa. Machine for bending and punching car-hooks .....	Aug. 9, 1870
109,037	Morris, Ellis H., Salem, Ohio. Planer .....	Nov. 8, 1870
99,338	Morris, George G., assignor to self and William W. Eastham, Boston, Mass. Paint-brush .....	Feb. 1, 1870
98,789	Morris, Henry D., Baldwinville, N. Y. Manufacturing axles .....	Jan. 11, 1870
99,583	Morris, Jacob H., Eaton, Ohio. Medicine for cure of fever and ague .....	Feb. 8, 1870
110,269	Morris, James C., Greenville, Tenn. Car-coupling .....	Dec. 20, 1870
	Morris, John C., Cincinnati, Ohio. Wood-bending machine.....(Extension) .....	Mar. 7, 1870
101,646	Morris, John H., Maquoketa, Iowa. Horse hay-rake .....	April 5, 1870
101,965	Morris, Joseph R., Houston, Texas. Furnace. (Granted for 25 years, 10 months, and 4 days from June 8, 1861) .....	April 12, 1870
110,152	Morris, Lewis, assignor to self and George W. Baker, Havre de Grace, Md. Milk-carrier .....	Dec. 13, 1870
107,944	Morris, Matthias K., Council Bluffs, Iowa. Feather-renovator .....	Oct. 4, 1870
	Morris, Tasker & Co. (See Newsham, William, assignor) .....	
	Same.....(See Glover, Thomas, assignor.)	
	Same.....(See Tasker, Stephen P. M., assignor) .....	
	Same.....(See McMillan & Morris, assignors.)	
	Same.....(See Wolfkiel, Walter F., assignor.)	
106,189	Morris, Thomas L., Claypool, Ky. Water-elevator .....	Aug. 9, 1870
101,491	Morris, Walter J., and William J. Reid, New York, N. Y. Apparatus for lighting gas by electricity .....	April 5, 1870
102,419	Morris, William, Philadelphia, Pa. Life-preserving garment .....	April 26, 1870
104,629	Same.....Process and composition for water-proofing leather, &c. ....	June 21, 1870
103,356	Morris, William H., Troy, Tenn. Cotton, hay, and hemp press .....	May 24, 1870
	Morris, William R. (See Robbins, Hiram, assignor.)	
	Morrissey, Jeremiah E. (See Curell, James H., assignor.)	
104,981	Morrison, Amos, and Rufus E. Rose, New Orleans, La. Submarine-plow .....	July 5, 1870
103,378	Morrison, David, and John D. Smith, New York, N. Y. Water-closet .....	Oct. 18, 1870
99,459	Morrison, H. B., Le Roy, N. Y. Stove-pipe joint .....	Feb. 1, 1870
101,757	Morrison, James A., Brady's Bend, Pa. Track-clearer for street-cars .....	April 12, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,031	Morrison, James A., assignor to self and A. J. Elliott, Brady's Bend, Pa. Cook-ing-utensil.	April 19, 1870
106,498	Morrison, James B., St. Louis, Mo. Flexible shaft	Aug. 16, 1870
	Morrison, James W. (See Werni, Peleg, assignor.)	
101,492	Morrison, Lawrence, and Amos G. Harms, Allegheny City, Pa. Saw-hanging..	April 5, 1870
98,515	Morrison, Robert, New York, N. Y. Wrench	Jan. 4, 1870
100,548	Same.....Yonkers, N. Y. Preparing button-hole twist.	Mar. 8, 1870
106,852	Morse, Andrew, Skowhegan, Me. Water-meter.	Aug. 30, 1870
103,818	Morse, Andrew, assignor to self and Thomas Odiorne, Skowhegan, Me. Spring weighing-apparatus.	May 31, 1870
3,959	Morse, Andrew J., Boston Mass. Soda-water fountain (Design)	April 5, 1870
104,336	Morse, Austin S., and Edwin A. Jefferies, Fort Wayne, Ind. Fire-kindler.	June 14, 1870
	Morse, Charles H. (See Hoffman, Austin D., assignor).....(Two cases.)	
106,499	Morse, Edward, assignor to Hinkley Knitting-Machine Company, Winchendon, Mass. Knitting-machine	Aug. 16, 1870
100,178	Morse, Francis B., Plantsville, Conn. Die for forming the heads of king-bolts..	Feb. 22, 1870
106,190	Same.....Process of forging carriage-shackles	Aug. 9, 1870
108,282	Same.....King-bolt.	Oct. 11, 1870
103,273	Morse, Francis B., assignor to self and H. D. Smith & Co., Plantsville, Conn. Felly-plate for carriage-wheels. (Antedated May 12, 1870)...	May 17, 1870
103,274	Same.....King-bolt socket for carriages. (Antedated May 12, 1870)	May 17, 1870
101,749	Same.....Die for forming T-bolts for whiffletrees. (Antedated Feb. 22, 1870)	Mar. 12, 1870
101,150	Same.....Carriage stop. (Antedated Feb. 22, 1870)	Mar. 12, 1870
108,283	Same.....Die for swaging carriage-clips	Oct. 11, 1870
108,720	Same.....Carriage-clip	Oct. 25, 1870
108,928	Same.....Shaft-iron for carriages.	Nov. 1, 1870
108,929	Same.....Carriage-spring.	Nov. 1, 1870
109,336	Same.....Die for forging carriage-clips	Nov. 15, 1870
109,927	Same.....Thill-coupling	Dec. 6, 1870
110,385	Same.....Method of forming shaft-irons for carriages.	Dec. 20, 1870
110,336	Same.....Clip-bar for carriages.	Dec. 20, 1870
110,581	Same.....Carriage-clip	Dec. 27, 1870
108,617	Morse, Frederick C., Bucksin, Col. Ter. Ore-pulverizer	Oct. 25, 1870
101,758	Morse, George F., Portland, Me. Table for changing gauge of railroad car-trucks.	April 12, 1870
102,299	Same.....Foot-board for locomotives.	April 26, 1870
104,485	Same.....Sleeping-car	June 21, 1870
107,945	Same.....Balanced slide-valve	Oct. 4, 1870
	Morse, George F., and Jonas Hamilton. (See Hamilton & Morse.)	
	Morse, James O. (See Hoyt, John, assignor.)	
104,187	Morse, John F., Oshkosh, Wis. Feed-water heating-apparatus.	June 14, 1870
	Morse, Leonard. (See Crooks, John P., assignor.)	
109,749	Morse, Lyman A., Battle Creek, Mich. Heating-stove. (Antedated Nov. 21, 1870)	Nov. 29, 1870
101,493	Morse, Marcellus A., Titusville, Pa. Walking-beam and sucker-rod connections for deep wells	April 5, 1870
103,357	Morse, Russell S., Wilton, Me. Washing-machine	May 24, 1870
106,853	Same.....Chelsea, Mass. Washing-machine	Aug. 30, 1870
104,982	Morse, Stephen A., assignor to American Standard Tool Company, Newark, N. J. Grinding-rest for twist-drills.	July 5, 1870
	Morse, Thomas G., et al. (See Boomer, Morse & Baschert.)	
110,153	Morse, William S., Washington, D. C. Wood-pavement.	Dec. 13, 1870
103,358	Morstatt, William, New York, N. Y. Folding-chair	May 24, 1870
104,337	Same.....Boring-machine	June 14, 1870
107,525	Morstatt, William, and Francis Kips; said Kips assignor to said Morstatt, New York, N. Y. Folding-chair	Sept. 20, 1870
4,037	Mortimer, Charles G., New York, N. Y. Hand-stamp (Design)	May 17, 1870
98,790	Mortimere, John R., New York, N. Y. Pneumatic-valve for organs, &c. (Ante-dated Jan. 3, 1870)	Jan. 11, 1870
102,697	Morton, Albanus W., Morrisania, N. Y. Transmitting power	May 3, 1870
103,914	Morton, Ephraim S., Plymouth, Mass. Nail-hammer	June 7, 1870
103,359	Morton, James, Philadelphia, Pa. Saw-set.	May 24, 1870
102,300	Morton, John S., Philadelphia, Pa. Pneumatic vacuum-engine	April 26, 1870
102,301	Morton, John S., and Joseph H. Laning, assignors to John S. Morton, Philadel-phia, Pa. Pneumatic vacuum-engine	April 26, 1870
101,647	Morton, Marcus, Gallatin, Mo. Bee-hive	April 5, 1870
	Morton, Nathaniel H. (See Bradford, Lewis G., assignor.)	
108,041	Morvan, Arthur Guy, New York, N. Y. Electro-photo damaskeening and enam-eling	Oct. 4, 1870
105,715	Moschcowitz, Schamu Moritz, New York, N. Y. Attachment for sewing-machines	July 26, 1870
99,782	Moschcowitz, Schamu Moritz, assignor to Wheeler & Wilson Sewing-Machine Company, New York, N. Y. Apparatus for frizzling cloth.	Feb. 15, 1870
104,755	Moseley, Charles H., Elgin, Ill. Punching-machine	June 28, 1870
104,756	Same.....Safety-pinion for watches	June 28, 1870
103,337	Moseley, Thomas W., assignor to R. P., Samuel R., and Anna M. L. Moseley, Bos-ton, Mass. Screw-pile	Nov. 15, 1870
103,765	Moseley, Thomas W. H., Boston, Mass. Tubular arch-bridge	May 31, 1870
106,854	Same.....Iron-building	Aug. 30, 1870
106,855	Same.....Bridge	Aug. 30, 1870
108,814	Same.....Pile for engineering purposes	Nov. 1, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,487	Moses, Isaac, New York, N. Y. Tailors' measure. (Antedated May 19, 1870)...	May 24, 1870
101,494	Moses, Myron, Malone, N. Y. Hop-picker. (Antedated April 1, 1870) .....	April 5, 1870
98,991	Moses, William, Buffalo, N. Y. Safety-valve.....	Jan. 18, 1870
101,648	Moses, William B., Washington, D. C. Furniture-pad .....	April 5, 1870
98,992	Mosher, Charles W., East Leon, N. Y. Lifting-jack .....	Jan. 18, 1870
98,993	Mosher, Levi P., assignor to self and George Y. Miller, Stony Creek, N. Y. Sled-brake .....	Jan. 18, 1870
98,994	Mosher, Martin J., Troy, N. Y. Cooking-stove .....	Jan. 18, 1870
109,539	Mosman, Martin H., Waterbury, Conn. Curtain-fixture .....	Nov. 22, 1870
	Moss, Lucien. (See Wiler, William, assignor.) .....	
102,420	Mossteller, William H., Sharonville, Ohio. Tool-rest for grindstones.....	April 26, 1870
106,714	Most, Charles, Bergen City, N. J. Fire-cracker holder.....	Aug. 23, 1870
105,479	Mot, Adolphe, Washington, D. C. Making butter.....	July 19, 1870
	Mothershead, J. L., <i>et al.</i> (See Farr, Henry L., assignor.) .....	
98,516	Mott, Abram C., Philadelphia, Pa. Iron-core for casting.....	Jan. 4, 1870
106,856	Mott, Barker D., assignor to self and Harcourt Mott, Green Island, N. Y. Hood for planing-machines .....	Aug. 30, 1870
100,179	Mott, John M., Chicago, Ill. Drive-well tube .....	Feb. 22, 1870
99,222	Mott, Jordan L., Mott Haven, N. Y. Boiler-stand .....	Jan. 25, 1870
	Same.....(See Bosworth, Daniel, assignor.) .....	
	Same.....(See Vedder & Heister, assignors) .....	(Two cases) (Design.)
4,137	Moule, Henry, and Henry John Girdlestone, assignors to the Earth-Closet Company, England. Deodorizing-apparatus for closets...(Division A, reissue).....	Oct. 4, 1870
4,138	Same.....Earth-closet.....(Division B, reissue).....	Oct. 4, 1870
109,236	Moulton, Amos A., Providence, R. I. Water-elevator.....	Nov. 15, 1870
	Moulton, Joseph H., <i>et al.</i> (See Perkins, Moulton & Sawyer.) .....	
105,233	Moulton, Luther V., Muskegon, Mich. Frame for sensitizing photographic paper .....	July 12, 1870
	Moulton, Moses S., and John Kavanagh. (See Kavanagh & Moulton.) .....	
107,088	Mouries, Jean Joseph Auguste, France. Preserving bread.....	Sept. 6, 1870
107,400	Mourning, Felix G., Bascow, Ill. Corn-plow .....	Sept. 13, 1870
106,606	Mowbray, George M., North Adams, Mass. Apparatus for the manufacture of nitro-glycerine .....	Aug. 23, 1870
106,607	Same.....Apparatus for the manufacture of nitro-glycerine, nitro-benzole, &c .....	Aug. 23, 1870
99,933	Mowrer, Jacob M., Milheim, Pa. Corn and cob crusher.....	Feb. 15, 1870
100,786	Moyer, Solomon S., Allentown, Pa. Siphon .....	Mar. 15, 1870
4,038	Moyers, George W., Gordonsville, Va. Lamp-chimney.....(Design) .....	May 17, 1870
107,284	Moyers, John, Hillsborough, Ohio. Churn .....	Sept. 13, 1870
103,644	Moyle, Samuel, jr., assignor to self and Ashbel J. Carrier, Bridgeport, Conn. Oil-can spout.....	May 31, 1870
101,151	Moyon, Henri Nicolas, and Jacques Eugene Lemerclier, France. Lasting-machine .....	Mar. 22, 1870
107,706	Mudge, Charles, Ovid, Mich. Scaffold-bracket. (Antedated Sept. 17, 1870).....	Sept. 27, 1870
	Mudge, Charles F., <i>et al.</i> (See Stedman, Nathan, assignor) .....	(Reissue.)
	Mueller, Urban, and Herman Bauman. (See Bauman & Mueller.) .....	
99,934	Muir, Christian, Lock Haven, Pa. Stove-lining and fire-brick .....	Feb. 15, 1870
102,576	Muirhead, Enoch, Greenfield, Ohio. Fence and gate.....	May 3, 1870
99,584	Mulford, Howell, Philadelphia, Pa. Grate .....	Feb. 8, 1870
	Mulford, John E. (See Steers, Thomas, jr., assignor.) .....	
100,057	Mulkey, J. T., Walton's Ford, Ga. Ointment for bruises, burns, &c.....	Feb. 22, 1870
99,460	Mullane, D. A., and I. O. L. Murray, New Orleans, La. Device for holding together the different parts of bureaus and other articles of furniture.....	Feb. 1, 1870
103,488	Muller, Aloyse, France. Breech-loading fire-arm .....	May 24, 1870
3,841	Muller, Nicholas, New York, N. Y. Statuette.....(Design) .....	Feb. 8, 1870
3,888	Same.....Clock-front .....	Mar. 8, 1870
3,900	Same.....same .....	Mar. 15, 1870
4,187	Same.....Statuette .....	June 28, 1870
4,188	Same.....Pair of statuettes.....(Design) .....	June 28, 1870
4,237	Same.....Clock-case .....	July 19, 1870
4,450	Same.....Clock-front .....	Nov. 1, 1870
4,496	Same.....same .....	Nov. 29, 1870
102,852	Muller, Peter, Lancaster, Pa. Truss.....	May 10, 1870
99,223	Muller, T. H., New York, N. Y. Power-loom.....	Jan. 25, 1870
	Muller, T. H., <i>et al.</i> (See Griffith, Wundram & Muller.) .....	
3,853	Muller, T. H., assignor to self, W. P. Abendroth, John Griffith, and G. W. Wundram, New York, N. Y. Steam-generator .....	(Reissue.)
108,721	Muller, Teilo H., and Henry C. Benson, assignors to Joseph Reckendorfer, New York, N. Y. Machine for cutting and smoothing the ends of pencils .....	Oct. 25, 1870
109,750	Same.....Machine for varnishing pencils .....	Nov. 29, 1870
100,312	Munday, Gilbert, Montezuma, Ohio. Saw-gummer .....	Mar. 1, 1870
98,614	Munger, George, assignor to self and J. W. Schermerhorn & Co., Madison, Conn. Desk and book-rack .....	Jan. 4, 1870
101,377	Munger, George, and James W. Schermerhorn, New York, N. Y. Easel .....	Mar. 29, 1870
100,313	Munger, W. T., assignor to P. and F. Corbin, New Britain, Conn. Reversible latch .....	Mar. 1, 1870
100,314	Same.....Rose for door-knobs .....	Mar. 1, 1870
3,918	Same.....Key for locks.....(Design) .....	Mar. 22, 1870
109,834	Same.....Door-latch .....	Dec. 6, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,759	Munn, Ira Y., Chicago, Ill. Grain-drier .....	April 12, 1870
104,055	Munro, Archibald, and William B. Adamson, Scotland. Machine for cutting and dressing stone .....	June 7, 1870
	Munroe, C. W., and C. C. Dickerman. (See Baucroft, C. R., assignor.) .....	
102,302	Munroe, George H., New York, N. Y. Apparatus for cooking meat by steam .....	April 26, 1870
101,903	Munroe, John I., Woburn, Mass. Bung-cutter .....	April 12, 1870
101,934	Same.....Horse hay-rake .....	April 12, 1870
	Same.....(See Harrington, Edward F., assignor.) .....	
	Munschauer, George J., et al. (See Heinz, Adam, assignor.) .....	
101,649	Munson, Albert L., New Haven, Conn. Hand-stamp .....	April 5, 1870
4,017	Same.....same.....(Design) .....	May 10, 1870
99,461	Munson, David, Indianapolis, Ind. Lightning-rods. (Antedated Jan. 26, 1870) .....	Feb. 1, 1870
100,549	Same.....same.....(Extension) .....	Mar. 8, 1870
	Same.....same.....(Extension) .....	Aug. 4, 1870
102,853	Munson, Ira F., Washington, D. C. Wheel for vehicles .....	May 10, 1870
104,056	Munson, John W., Bridgeport, Conn. Manufacture of rubber-coated carriage-trimmings .....	June 7, 1870
108,167	Munzinger, Peter, Philadelphia, Pa. Tray for gas-purifiers .....	Oct. 11, 1870
109,142	Same.....Condenser for gas-works .....	Nov. 8, 1870
109,540	Same.....Center-seal for gas-works .....	Nov. 22, 1870
106,191	Murdock, Andrew, Brooklyn, E. D., N. Y. Base-burning fire-place heater .....	Aug. 9, 1870
108,930	Murdock, Richard, Baltimore, Md. Shelving for stores .....	Nov. 1, 1870
98,615	Murdock, William C., and Edgar K. Haynes, Boston, Mass. Apparatus for the manufacture of chocolate-drops and other confections .....	Jan. 4, 1870
106,192	Murfee, James W., Havana, Ala. Attachment to plows .....	Aug. 9, 1870
106,193	Same.....Attaching the point to the shank of subsoil-plows .....	Aug. 9, 1870
102,958	Murfey, Eliza D., New York, N. Y. Material for packing journals and bearings .....	May 10, 1870
105,361	Same.....Material for packings and bearings .....	July 12, 1870
108,284	Same.....Impregnating fibrous material for packing, &c .....	Oct. 11, 1870
108,285	Same.....Saturating fibrous materials with powdered substances for bearings and packings .....	Oct. 11, 1870
108,286	Same.....Material for packing and bearings .....	Oct. 11, 1870
109,237	Same.....Mode of preventing the heating of axles or journals .....	Nov. 15, 1870
108,079	Murfey, Eliza Dexter, assignor to Manhattan Packing Manufacturing Company, New York, N. Y. Journal-box .....	Oct. 4, 1870
108,080	Same.....same.....	Oct. 4, 1870
108,081	Same.....same.....	Oct. 4, 1870
108,722	Same.....Material for journals and bearings .....	Oct. 25, 1870
108,931	Same.....Composition for bearings .....	Nov. 1, 1870
109,238	Same.....Spindle-step .....	Nov. 15, 1870
109,239	Same.....Material for bearings and journals .....	Nov. 15, 1870
4,210	Same.....same.....(Reissue) .....	Dec. 20, 1870
110,582	Same.....same.....	Dec. 27, 1870
110,583	Same.....Bearing and packing material .....	Dec. 27, 1870
110,584	Same.....Manufacture of material for journals, bearings, and packings .....	Dec. 27, 1870
107,946	Murgatroyd, Frank, Cleveland, Ohio. Expanding-tap .....	Oct. 4, 1870
104,180	Murphy, Albert L., Philadelphia, Pa. Horseshoe .....	Feb. 22, 1870
99,193	Murphy, John, New York, N. Y. Manufacture of India-rubber and gutta-percha goods .....	Feb. 15, 1870
101,905	Same.....Manufacture of India-rubber packing, belting, and hose .....	April 12, 1870
104,338	Murphy, John, assignor to self and Joseph F. Tobin, Green Point, N. Y. Rattan-cutter .....	June 14, 1870
107,947	Murphy, John, assignor to Oren J. Faxon, Roslindale, Mass. Piano-lock .....	Oct. 4, 1870
110,154	Murphy, John W., Philadelphia Pa. Wrought-iron column .....	Dec. 13, 1870
100,787	Murphy, Joseph H. and Patrick J., Abingdon, Ill. Farm-gate .....	Mar. 15, 1870
104,486	Murphy, Michael C., Boston, Mass. Ventilating-window for railroad-cars .....	June 21, 1870
99,462	Murphy, Peter, assignor to E. and H. T. Anthony & Co., New York, N. Y. Photographic-printing frame .....	Feb. 1, 1870
100,920	Murray, Alexander F., and Henry Green, Moline, Ill. Water-wheel .....	Mar. 15, 1870
105,116	Murray, Alexander R., New York, N. Y. Water-closet box .....	July 5, 1870
104,872	Murray, Edgar, assignor to Henry Gerecke, New York, N. Y. Wire-cutter .....	June 28, 1870
109,038	Murray, Edgar, assignor to Charles W. Dunlap, New York, N. Y. Tool-handle .....	Nov. 8, 1870
	Murray, I. O. L., and D. A. Mullane. (See Mullane & Murray.) .....	
100,058	Murray, S. W., and B. P. Lamason, Milton, Pa. Railway oil-car .....	Feb. 22, 1870
	Murray, Wellwood, and Reuben D. Turner. (See Loew, Oscar, assignor.) .....	
99,463	Murray, William, Alexandria, Va. Corn-harvester .....	Feb. 1, 1870
106,194	Murrell, James W., Eldorado, Ark. Horse-power .....	Aug. 9, 1870
	Murrill, James H., assignor to self and Lewis R. Keizer, Baltimore, Md. Damper-regulator .....	
103,645	Muscroft, Charles S., Cincinnati, Ohio. Spiral-fastening .....	Oct. 4, 1870
	Musgrave, Hiram B., Cincinnati, Ohio. Gas-cooking stove.....(Extension) .....	May 31, 1870
98,702	Musselman, Christian C., Somerset, Pa. Combined press for cheese, &c.....	Jan. 4, 1870
103,379	Mutchler, Joseph, Grand Rapids, Mich. Belt-shifter .....	Jan. 11, 1870
103,646	Mutell, Charles W., Springfield, Mass. Spring bed-bottom .....	Oct. 18, 1870
107,707	Mutersbaugh, Abraham, Lewinsville, Va. Washing-machine .....	May 31, 1870
99,695	Myers, C. K., assignor of one-half interest to Horace Turrell, Pekin, Ill. Harvester-cutter .....	Sept 27, 1870
108,380	Myers, David, Chicago, Ill. Pneumatic street-car .....	Feb. 8, 1870
109,338	Same.....Air-engine .....	Oct. 18, 1870
108,932	Myers, David, and Albert B. Pullman, Chicago, Ill. Pneumatic car-brake .....	Nov. 15, 1870
104,758	Myers, Edward, Davis, Ill. Medical compound .....	Nov. 1, 1870
		June 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,181	Myers, Ephraim, Creagerstown, Md. Harvester-dropper .....	Feb. 22, 1870
108,381	Myers, Frederick, New York, N. Y. Nut-fastening .....	Oct. 18, 1870
108,382	Same.....same.....	Oct. 18, 1870
109,648	Same.....Towel-rack .....	Nov. 29, 1870
102,303	Myers, Harvey L., assignor to self, N. Braitegam, and T. Slag, Kingston, Ohio. Window-sash.....	April 26, 1870
	Myers, Jacob G. (See Caslow, Henry, assignor.)	
100,788	Myers, James, jr., Brooklyn, E. D., N. Y. Mode of preventing the stealing of bonds, &c.....	Mar. 15, 1870
108,042	Same.....Williamsburgh, N. Y. Metal-plate of iron and steel.....	Oct. 4, 1870
110,489	Same.....Treating Bessemer steel.....	Dec. 27, 1870
102,698	Myers, John, Cincinnati, Ohio. Hydrant .....	May 3, 1870
	Myers, John, and Robert G. Eunson, by Eugene S. Eunson and Margaret Myers, New York, N. Y. Machine for sawing thin boards..... (Disclaimer filed) .....	Dec. 21, 1870
108,723	Myers, John W., Lyons, Iowa. Earth-excavator .....	Oct. 25, 1870
105,117	Myers, Lorenzo, Ludlowville, N. Y. Horse hay-rake. (Antedated June 23, 1870) .....	July 5, 1870
100,315	Myers, M. D., Frankfort, N. Y. Ratchet and pawl mechanism .....	Mar. 1, 1870
	Myers, Philip. (See Barker, Joseph, assignor)..... (Two cases.)	
103,225	Myers, P. Andrew, Round Hill, Pa. Sawing-machine .....	May 17, 1870
	Myers, R. Westbrook, et al. (See Gardner, William and George, assignors.)	
	Myers, Samuel, and Thomas M. Herriott. (See Herriott & Myers).... (Reissue.)	
106,500	Myers, Washington B., Hampton, Pa. Seeder and fertilizer combined .....	Aug. 16, 1870
103,074	Naftel, Joseph, Cleveland, Ohio. Compound for manufacture of varnish and paint.....	May 17, 1870
	Nagoua, Joseph, and Emile Lefranc. (See Lefranc & Nagoua.)	
	Nalette, Napoleon. (See Darozier, Levi, assignor.)	
	Nanerth, Jacob. (See Pfeifer, Rupert, assignor.)	
109,439	Nanny, Oliver T., assignor to self and J. M. Hanford, Amity, N. Y. Horse hay-rake .....	Nov. 22, 1870
	Napp, William, and William F. Class. (See Class & Napp.)	
104,630	Nasch, Isidor, Prussia. Button-hole sewing-machine .....	June 21, 1870
107,949	Nash, George A., Niles, Mich. Ice-cream pail .....	Oct. 4, 1870
107,089	Nash, Stephen S., New York, N. Y. School-register .....	Sept. 6, 1870
	Nash, William. (See Cheney, Chandler, assignor.)	
	Nash, William, and Robert I. Robeson. (See Robeson & Nash.)	
104,188	Nason, Joseph, and David Saunders, assignors to Joseph Nason and H. R. Worthington, New York, N. Y. Steam-generator.....	June 14, 1870
	National Glass Company. (See Kirchner, William M., assignor)..... (Design.)	
	National Horse-Nail Company. (See Wills, Harry A., assignor.)	
	National Screw Company. (See Pierce, Elijah S., assignor)..... (Two cases.) (Reissue.)	
	National Spring Company. (See Bussell, Erastus T., assignor)..... (Reissue.)	
3,919	Natorp, Gustavus, New York, N. Y. Railway-car wheel..... (Reissue.)	April 12, 1870
98,616	Nauen, H. O., New York, N. Y. Lock for sewing-machine cases.....	Jan. 4, 1870
107,401	Same.....same.....	Sept. 13, 1870
	Naylor & Co. (See Cheney, Edwin R., assignor.)	
	Neal, Thomas L., et al. (See Maxwell, Neal & Long.)	
	Nealey, John C., and Albion P. Clements. (See Clements & Nealey.)	
109,039	Neames, Charles, New Orleans, La. Setting boilers.....	Nov. 8, 1870
107,090	Nebergall, Andrew Jackson, Cedar County, Iowa. Corn-stalk cutter .....	Sept. 6, 1870
108,168	Nebinger, George R., Philadelphia, Pa. Washing-machine .....	Oct. 11, 1870
101,760	Neeb, Peter, Buffalo, N. Y. Circular-saw mill. (Antedated April 5, 1870) .....	April 12, 1870
100,789	Needham, John, Morrisania, N. Y. Sofa-bed .....	Mar. 15, 1870
101,152	Needham, Orwell H., New York, N. Y. Treadle .....	Mar. 22, 1870
107,619	Same.....Compound treadle.....	Sept. 20, 1870
109,649	Neefus, Peter W., New York, N. Y. Metallic and elastic stair-plate. (Antedated Nov. 26, 1870) .....	Nov. 29, 1870
109,650	Same.....Metallic and elastic door-mat. (Antedated Nov. 26, 1870) .....	Nov. 29, 1870
109,651	Same.....Stair and floor plate. (Antedated Nov. 26, 1870) .....	Nov. 29, 1870
102,959	Neely, Benjamin F., Daleville, Ind. Clod-fender and cultivator combined.....	May 10, 1870
107,526	Neff, John, jr., Pultney, N. Y. Cultivator .....	Sept. 20, 1870
102,699	Neff, Simon, Clymouth, Ind. Well-tube .....	May 3, 1870
101,301	Neikirk, D. F., and John J. Koch, Republic, Ohio. Washing-machine.....	Mar. 29, 1870
	Neill, Arthur, and John F. Collins. (See Collins & Neill.)	
100,550	Neill, George W., assignor to Chickering & Sons, Boston, Mass. Damper-action for upright piano-fortes .....	Mar. 8, 1870
104,756	Neill, Robert L., Paterson, N. J. Boiler-tube plug .....	June 28, 1870
110,270	Neisch, Robert, Allentown, Pa. Machine for making cigars.....	Dec. 20, 1870
109,751	Nelke, Louis, Chicago, Ill. Station-indicator .....	Nov. 29, 1870
106,857	Nelson, Charles, Brooklyn, E. D., N. Y. Lubricator .....	Aug. 30, 1870
101,650	Nelson, Hiram, assignor to self and Alpheus Dolloff, Lake Village, N. H. Machine for crozing barrels .....	April 5, 1870
106,393	Nelson, John, Rockford, Ill. Box .....	Aug. 16, 1870
	Nelson, John, and W. W. Burson. (See Burson & Nelson.)	
102,304	Nelson, Mortimer, New York, N. Y. Mold for stereotypes .....	April 26, 1870
108,815	Nelson, Nels, New York, N. Y. Screw-cutting die .....	Nov. 1, 1870
100,790	Nelson, Thomas, assignor to Newton Reynolds and Horace G. Nelson, Troy, N. Y. Buckwheat-hulling machine. (Antedated March 3, 1870) .....	Mar. 15, 1870
	Nelson, Thomas, Troy, N. Y. Machinery for weavingshade-cord.... (Extension) .....	Dec. 14, 1870
102,146	Nes, Charles Motier, York, Pa. Manufacture of steel .....	April 19, 1870
102,960	Same.....Reworking Bessemer steel .....	May 10, 1870
104,873	Same.....Manufacture of steel .....	June 28, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,287	Nes, Charles Motier, York, Pa. Manufacture of steel .....	Oct. 11, 1870
109,752	Same..... Manufacture of iron and steel .....	Nov. 29, 1870
110,490	Nesbitt, John, Concord, N. H. Balanced slide-valve.....	Dec. 27, 1870
107,193	Nestester, Halvor H., Deerfield, Wis. Harvester.....	Sept. 6, 1870
107,527	Nettleton, David, Humburd, Wis. Floor-clamp.....	Sept. 20, 1870
101,153	Nettleton, Frederick S., and Erwin J. Fuller, Leominster, Mass. Clothes-dryer.....	Mar. 22, 1870
109,040	Nettleton, Horace A., and Edwin B. Lawton, West Cheshire, Conn. Machine for scouring the eyes of needles .....	Nov. 8, 1870
109,652	Nettleton, Willford H., and Henry A. Seymour. ( <i>See Seymour &amp; Nettleton.</i> ) Neumann, Eugen, assignor through mesne assignments to Charles D. Tyler, New York, N. Y. Steam-generator .....	Nov. 29, 1870
102,305	Neumann, Joseph, Philadelphia, Pa. Street-lantern.....	April 26, 1870
99,102	Nevill, G. W., Richmond, Va. Ditching-machine .....	Jan. 25, 1870
105,430	Neville, John, Brooklyn, N. Y. Making steel .....	Dec. 8, 1870
106,272	Nevin, David, Georgetown, Col. Ter. Ore-separator.....	July 19, 1870
4,510	Nevins, John H., assignor to William A. Bosman, Brooklyn, E. D., N. Y. Blind-fastening hinge.....	Aug. 9, 1870
4,511	Newberry, Richard W., New York, N. Y. Coal-box.....	Dec. 13, 1870
100,435	Same..... same .....	Dec. 13, 1870
108,169	Newbrough, John B., New York, N. Y. Manufacture of hard rubber.....	Mar. 1, 1870
108,288	Newby, Thomas J., Richmond, Ind. Apparatus for evaporating sorghum juice, cooking feed, &c. (Antedated Oct. 1, 1870).....	Oct. 11, 1870
104,339	Same..... Apparatus for cooking and evaporating.....	Oct. 11, 1870
102,961	Newcomb, George F., New Haven, Conn. Baggage-check .....	June 14, 1870
101,906	Newcomb, Gideon E., Bucksport, Maine. Boot and shoe heels .....	May 10, 1870
102,577	Newcomer, George, Cleveland, Ohio. Stove-pipe shelf .....	April 12, 1870
99,103	Newell, Augustus, and William Pim, Chicago, Ill. Planing-chuck.....	May 3, 1870
103,226	Newell, Daniel P., assignor to self, S. Washburn, and Charles R. Otis, Chicago, Ill. Soldering-machine .....	Jan. 25, 1870
104,189	Newell, Elisha R. ( <i>See Lane, George W., assignor.</i> ) Newell, Joseph N., Adrian, Mich. Bed-bottom .....	May 17, 1870
101,495	Newell, Lewis T., Geneva, Ohio. Churn-dasher. (Antedated May 20, 1870) .....	June 14, 1870
3,960	Newell, Lorenzo D., New York, N. Y. Marine furniture.....	April 5, 1870
	Same..... Sprig of artificial flowers.....	April 5, 1870
	New England Pump-Manufacturing Company. ( <i>See Stedman, Nathan, assignor.</i> ) .....	(Reissue.)
	New England Toy Company. ( <i>See Barker, Stephen A., assignor.</i> ) New Haven Folding-Chair Company. ( <i>See Dann, Isaac N., assignor.</i> )	
98,995	Newhouse, Sewell, Oneida Community, Oneida, N. Y. Metallic cartridge.....	Jan. 18, 1870
104,983	Newkirk, Henry H., <i>et al.</i> ( <i>See Hamel &amp; Holden, assignors.</i> ) Newland, Albert M., Olivet, Mich. Combined cart, wheel-barrow, and turnip-drill .....	July 5, 1870
109,041	Same..... Combined barrow and turnip-drill .....	Nov. 8, 1870
108,724	Newlin, William, Attica, Ind. Gang-plow .....	Oct. 25, 1870
106,074	Newman, George S., and William H. Kite. ( <i>See Kite &amp; Newman.</i> ) Newman, Lane L., East Saginaw, Mich. Bed-bottom .....	Aug. 2, 1870
105,716	Newman, Nelson, Springfield, Ill. Corn-harvester.....	July 26, 1870
110,271	Newman, Samuel, deceased, by John Newman, administrator, Cleveland, Ohio. Stave-jointer .....	Dec. 20, 1870
109,653	Newman, William R., Galesburgh, Ill. Hand-power baling-press .....	Nov. 29, 1870
	New Orleans Pneumatic Propelling Company. ( <i>See Wailey, C. W., assignor.</i> ) Same..... ( <i>See Roberts, Franklin, assignor.</i> )	
108,816	Newsham, Sydney James, Mont Clair, N. J., and William H. Haines and William S. Henson, Newark, N. J. Manufacture of ice.....	Nov. 1, 1870
100,654	Newsham, William, assignor to Morris, Tasker & Co., Philadelphia, Pa. Machine for turning balls or mandrels.....	Mar. 8, 1870
104,984	Same..... Tap for and mode of cutting dies .....	July 5, 1870
104,985	Same..... Machine for cutting dies .....	July 5, 1870
106,273	Same..... Molding and venting machine.....	Aug. 9, 1870
106,195	Newsom, Godfrey S., Nashville, Tenn. Subsoil-pulverizer .....	Aug. 9, 1870
106,858	Newsom, John J., <i>et al.</i> ( <i>See Reed, Hoagland &amp; Newsom.</i> ) Newton, Abner, Darby Creek, Ohio. Animal-trap .....	Aug. 30, 1870
108,383	Same..... Screw-driver.....	Oct. 18, 1870
110,387	Newton, Charles A., Providence, R. I. Basin-cock.....	Dec. 20, 1870
103,915	Newton, Henry J., <i>et al.</i> ( <i>See McCracken, Edwin D., assignor.</i> ) (Two cases.) Newton, Hial H., Cleveland, Ohio. Tidy-pin.....	June 7, 1870
110,272	Newton, Isaac E. ( <i>See Stever, Jeremiah, assignor.</i> ) Newton, James, Hanover, N. H. Music-stand.....	Dec. 20, 1870
100,436	Newton, James H., Holyoke, Mass. Manufacture of combined cloth and paper fabric .....	Mar. 1, 1870
99,464	Newton, Jasper, and Ira Barfield, Richland Parish, La. Medical compound for the cure of dropsy .....	Feb. 1, 1870
102,854	Newton, William Edward, England. Apparatus for cleaning and preparing rags for the manufacture of paper.....	May 10, 1870
107,799	Same..... ( <i>See Mitchell, Joseph, assignor.</i> ) Newton, William H., Newport, R. I. Earth-closet .....	Sept. 27, 1870
	New York Hat-Finishing Company. ( <i>See Stout, George W., assignor.</i> ) New York Improved Anthracite Coal Company. ( <i>See De Smedt, E. J., assignor.</i> ) (Six cases.) New York Laundry Manufacturing Company. ( <i>See Chamberlin, George E., assignor.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	New York Rubber Company. ( <i>See</i> Alden, Henry A., assignor.)	
	Same.....( <i>See</i> Rider & Bird, assignors.)	
	Same.....( <i>See</i> Smith, George C., assignor.)	
	New York Water-proof Paper Company. ( <i>See</i> Hudson, E. P., assignor.) (Two cases.)	
3,977	Ney, Elemir J., assignor to Lowell Manufacturing Company, Dracut, Mass. Carpet-pattern.....(Design).....	April 19, 1870
3,978	Same.....same.....(Design).....	April 19, 1870
3,979	Same.....same.....(Design).....	April 19, 1870
3,980	Same.....same.....(Design).....	April 19, 1870
3,981	Same.....same.....(Design).....	April 19, 1870
3,982	Same.....same.....(Design).....	April 19, 1870
3,983	Same.....same.....(Design).....	April 19, 1870
4,039	Same.....same.....(Design).....	May 17, 1870
4,040	Same.....same.....(Design).....	May 17, 1870
4,090	Same.....same.....(Design).....	May 31, 1870
4,091	Same.....same.....(Design).....	May 31, 1870
4,092	Same.....same.....(Design).....	May 31, 1870
4,093	Same.....same.....(Design).....	May 31, 1870
4,094	Same.....same.....(Design).....	May 31, 1870
4,339	Same.....same.....(Design).....	Sept. 6, 1870
4,340	Same.....same.....(Design).....	Sept. 6, 1870
4,341	Same.....same.....(Design).....	Sept. 6, 1870
4,342	Same.....same.....(Design).....	Sept. 6, 1870
4,343	Same.....same.....(Design).....	Sept. 6, 1870
4,411	Same.....same.....(Design).....	Oct. 11, 1870
4,412	Same.....same.....(Design).....	Oct. 11, 1870
4,413	Same.....same.....(Design).....	Oct. 11, 1870
4,414	Same.....same.....(Design).....	Oct. 11, 1870
108,618	Neymann, E. H. ( <i>See</i> Guenther, George, assignor.).....(Reissue.)	
	Neynaber, Adolphus F. W., Philadelphia, Pa. Low-water indicator. (Antedated Oct. 20, 1870)	Oct. 25, 1870
101,302	Niccum, Joel G., Indianapolis, Ind. Tie-bar for holding bent wood.....	Mar. 29, 1870
106,859	Nicholls, Henry, Fairfield, Ky. Cotton-seed planter.....	Aug. 30, 1870
107,402	Nicholls, Henry Austin, assignor to Alonzo B. Pearson, St. Louis, Mo. Corn-planter.....	Sept. 13, 1870
3,995	Nichols, Eli L., and F. A. Edgar, Folsom, Cal. Pruning-shears.....(Design).....	April 26, 1870
106,608	Nichols, Henry J., Searsport, Me. Cabin-table.....	Aug. 23, 1870
98,703	Nichols, John P., New Richmond, Ohio. Churn.....	Jan. 11, 1870
99,104	Nichols, Josiah H., and William Bower, assignors to Beaver Falls Cutlery Company, Beaver Falls, Pa. Table-cutlery.....	Jan. 25, 1870
100,921	Nichols, Josiah H., and William Bower, Beaver Falls, Pa. Handle for table-cutlery.....	Mar. 15, 1870
102,306	Same.....Cutlery.....	April 26, 1870
100,791	Nichols, M. S., and Reuben Weaver, Central Village, Conn. Screen coal-hod.....	Mar. 15, 1870
102,032	Nichols, William D., Chicago, Ill. Wind-mill.....	April 19, 1870
	Nichols, William J., et al. ( <i>See</i> Gale, L. D., assignor).....(Two cases.) (Reissue.)	
	Same.....( <i>See</i> Rand, Alonzo C., assignor.)	
102,421	Nichols, William Rhoda, assignor, to Nichols, Pickering & Co., Philadelphia, Pa. Helical spring.....	April 26, 1870
102,422	Nichols, William Rhoda, and Charles Williams Pickering, Philadelphia, Pa. Spring for cars and other vehicles.....	April 26, 1870
109,440	Nichols, William T., assignor to self and H. H. Lawrence, Chicago, Ill. Road-scraper.....	Nov. 22, 1870
108,817	Nicholson, Ezra, Cleveland, Ohio. Clutch-gearing.....	Nov. 1, 1870
105,118	Nicholson, Frederic, assignor to Peter Arndt and Richard M. Tunks, Warsaw, N. Y. Tallying register for freight.....	July 5, 1870
	Nicholson, James H., and Alonzo Comstock. ( <i>See</i> Comstock & Nicholson.)	
106,274	Nicholson, Jesse, Monticello, Ind. Apparatus for loading wood on railway-cars.....	Aug. 9, 1870
108,170	Nicholson, Oscar, New York, N. Y. Colortrope.....	Oct. 11, 1870
98,617	Nickason, Gouverneur M., Ellenville, N. Y. Marker for carpenters.....	Jan. 4, 1870
100,551	Same.....Scroll-saw.....	Mar. 8, 1870
102,700	Same.....Sash-marker.....	May 3, 1870
107,091	Same.....Machine for boring and marking.....	Sept. 6, 1870
106,950	Nickels, Michael Lewis, assignor to self and Thomas Nickels, Dunlapville, Ind. Feeder for grain-drills.....	Aug. 30, 1870
100,182	Nickels, William F., Philadelphia, Pa. Water-filter, liquor-cooler, and refrigerator. (Antedated Sept. 7, 1869)	Feb. 22, 1870
107,620	Nickerson, Benjamin L., San Francisco, Cal. Preserving and hardening wood.....	Sept. 20, 1870
	Nickerson, Benjamin R., et al. ( <i>See</i> Samuels, John L., assignor).....(Reissue.)	
	Nicodemus, William H., and James I. Smith. ( <i>See</i> Smith & Nicodemus.)	
98,878	Nicol, Joseph, assignor to Sheldon & Co., Auburn, N. Y. Series of dies for forming axles.....	Jan. 18, 1870
107,708	Nicolai, Julius, Boston, Mass. Folding-chair.....	Sept. 27, 1870
108,171	Nicolay, John G., Springfield, Ill. Sash-fastener.....	Oct. 11, 1870
108,172	Nielson, Alfred, New York, N. Y. Universal-jointed treadle.....	Oct. 11, 1870
109,835	Same.....Brooklyn, N. Y. Treadle for sewing-machines.....	Dec. 6, 1870
102,855	Niles, Peter H., Boston, Mass. Funnel.....	May 10, 1870
110,273	Same.....Corset-clamp and spring. (Antedated Dec. 9, 1870.)	Dec. 20, 1870
	Niles, Samuel D., et al. ( <i>See</i> Bellamy, John H., assignor).....(Three cases.) (Design.)	
107,528	Niles, Sinclair D. G., Helena, Ark. Hame-fastening.....	Sept. 20, 1870
106,715	Nipp, John, jr., Raleigh, Ind. Water-power wheel.....	Aug. 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Nisbit, William A., and Hermann Stieren. ( <i>See Stieren &amp; Nisbit.</i> )	
102,423	Nislosduff, Stas, Lowell, Mass. Velocipede	April 26, 1870
103,360	Nittinger, August, jr., Philadelphia, Pa. Meat-cutter	May 24, 1870
106,860	Same.....Oscillating steam-engine	Aug. 30, 1870
	Nixon & Co. ( <i>See Barber, Vincent S., assignor</i> )	
104,986	Nixon, Joseph, Pittsburgh, Pa. Ejector	July 5, 1870
104,987	Same.....Filter	July 5, 1870
	Nixon, William, <i>et al.</i> ( <i>See Mellen, Van Sandt &amp; Palmer, assignors.</i> )	
104,190	Noah, George C., Boston, Mass. Manufacture of paste	June 14, 1870
101,651	Noble, A. E., La Motte, Iowa. Flood-gate	April 5, 1870
105,590	Noble, Butler G., Brooklyn, N. Y. Treating oil-wells to remove obstructions to the flow of oil.	July 19, 1870
	Noble, Charles, & Co. ( <i>See Martino &amp; Currie, assignors</i> ).....(Design.)	
106,394	Noble, Edward, North Haven, Conn. Self-closing compression-faucet	Aug. 16, 1870
104,631	Noble, L. D., Cerro Gordo, Ill. Ditching-machine	June 21, 1870
101,652	Nobles, M. V., Elmira, N. Y. Gridiron-case	April 5, 1870
103,507	Same.....Boat-detaching apparatus	Oct. 18, 1870
103,489	Nock, George, New Monmouth, N. J. Furnace for producing "sponge" from iron ore	May 24, 1870
100,792	Noé, Charles S., Bergen Point, N. J. Hotel and burglar alarm	Mar. 15, 1870
101,496	Nolan, James, assignor to self and E. T. Henry, Oxford, N. J. Feeding-apparatus for nail-machines	April 5, 1870
100,316	Nolan, John H., Waterville, N. Y. Children's horse and self-propeller. (Ante-dated Feb. 11, 1870)	Mar. 1, 1870
109,042	Nolan, Nicholas, New York, N. Y. Hydraulic apparatus. (Antedated Oct. 29, 1870)	Nov. 8, 1870
107,621	Nolden, Melchior, Prussia. Apparatus for mixing, heating, and cooling substances	Sept. 20, 1870
101,497	Nonnenbacher, John, New York, N. Y. Miter-machine	April 5, 1870
	Noraconk, Michael F., and Elias Bickel. ( <i>See Bickel &amp; Noraconk.</i> )	
99,585	Norcross, E. D., Augusta, Me. Hot-air furnace	Feb. 8, 1870
107,092	Nordell, Carl, New York, N. Y. Shingle-machine	Sept. 6, 1870
107,800	Norden, Philip, and Hermann Mischo, New York, N. Y. Dyeing furs	Sept. 27, 1870
	Nordmann Brothers. ( <i>See Stauffer, Henry, assignor.</i> )	
102,307	Nordquist, Johan F., Sweden. Wrench	April 26, 1870
110,155	Nordyke, Addison H., Richmond, Ind. Flour-packer	Dec. 13, 1870
	Nordyke, Marmon & Co. ( <i>See Marmon, Daniel W., assignor.</i> )	
100,059	Norelius, Oliver, Minneapolis, Minn. Paper-feeder	Feb. 22, 1870
99,586	Norfolk, John R., Salem, Mass. Loom	Feb. 8, 1870
105,970	Norgan, Anthony T., Pottsville, Pa. Car-coupling	Aug. 2, 1870
105,234	Norinan, Emma, New Orleans, La. Fire-place grate	July 12, 1870
99,465	Norris, Fred, Freedom Plains, N. Y. Thill-coupling	Feb. 1, 1870
105,832	Same.....Wagon-seat fastening	July 26, 1870
103,075	Norris, George E., Glen Falls, N. Y. Saw-filing instrument	May 17, 1870
107,950	Norris, Nathan, Buchanan, Mich. Railway-car coupling	Oct. 4, 1870
99,696	Norris, Nathan, Charles S., and Horace S. Black, Buchanan, Mich. Wood-turning lathe	Feb. 8, 1870
99,784	Norris, Philetus W., Detroit, Mich. Grubbing ax and hook combined	Feb. 15, 1870
100,793	Norris, Richard H., Paterson, N. J. Spooling-gauge	Mar. 15, 1870
	Norris, Richard H., and Edward Watson. ( <i>See Watson &amp; Norris.</i> )	
	North, O. B., & Co. ( <i>See Stout, Stephen, assignor</i> ).....(Reissue.)	
	Same.....( <i>See Roberts, Benjamin S., assignor.</i> )	
110,585	Northrup, Moses V., Hornitas, Cal. Hay and other press	Dec. 27, 1870
103,384	Norton, Cicero P., Prairie City, Iowa. Cultivator	Oct. 18, 1870
109,928	Norton, James L., England. Apparatus for dressing and furrowing millstones	Dec. 6, 1870
110,064	Same.....same	Dec. 13, 1870
109,240	Norton, James W., Pioneer, Pa. Clothes-pounder	Nov. 15, 1870
99,224	Norton, Junius S., Hartford, Conn. Pocket-safe for friction-matches	Jan. 25, 1870
99,936	Norton, J. V., Plainville, N. Y. Whiffletree	Feb. 15, 1870
106,716	Norton, Marcus P., assignor to Helen M. Ingalls, Troy, N. Y. Hand-stamp	Aug. 23, 1870
4,143	Same.....Post-office post-marking and canceling hand-stamp. (Division A, reissue)	Oct. 4, 1870
4,144	Norton, Marcus P., assignor through mesne assignments to the Secombe Manufacturing Company, Troy, N. Y. Hand-canceling stamp. (Division B, reissue)	Oct. 4, 1870
106,951	Norton, Russell W., New Haven, Conn. Machine for making wire bells	Aug. 30, 1870
	Norton, Sidney S. ( <i>See Davis, William M., assignor.</i> )	
	Norwalk Lock Company. ( <i>See Elwell, Henry H., assignor</i> ).....(Reissue.)	
	Norwood, Francis, 2d. ( <i>See Woodberry, Richard A., assignor.</i> )	
108,173	Norwood, Richard W., Courtland, Ala. Transmitting power. (Antedated Oct. 1, 1870)	Oct. 11, 1870
98,971	Norwood, Rufus, Baltimore, Md. Concrete paving-block	Jan. 11, 1870
	Noss, Samuel. ( <i>See Brown, William, assignor.</i> )	
102,033	Noteman, Alonzo, Toledo, Ohio. Apparatus for redistilling and rectifying spirits	April 19, 1870
102,578	Notman, George, Deerfield, Ohio. Horse hay-rake	May 3, 1870
100,655	Notman, Walter, Deerfield, Ohio. Cultivator	Mar. 8, 1870
98,879	Notr, Benjamin, Albany, N. Y. Illuminator for stoves	Jan. 18, 1870
99,339	Same.....Illuminator for stoves, &c.	Feb. 1, 1870
106,609	Same.....Base-burning stove	Aug. 23, 1870
109,437	Nottingham, Thomas J., Cincinnati, Ohio. Lubricator	Mar. 1, 1870
110,156	Same.....same	Dec. 13, 1870
	Nourse, Joel, <i>et al.</i> ( <i>See Holbrook, Howe &amp; Nourse.</i> )	
	Novelty Iron Works Manufacturing Company. ( <i>See Hull, A. J., assignor.</i> )	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,174	Nowlan, Samuel B. B., New York, N. Y. Steam-generator.....	Oct. 11, 1870
103,916	Noyes, Alpheus P., assignor to John S. Andrews, Middleton, Mass. Door-mat.....	June 7, 1870
105,362	Noyes, Baxter D., and Oscar G. Stratton, Greenfield, Mass. Dash-rail for carriages.....	July 12, 1870
106,861	Noyes, Charles Horace, Brooklyn, N. Y. Combination side-comb.....	Aug. 30, 1870
101,154	Noyes, George, Washington, D. C. Pug mill.....	Mar. 22, 1870
105,119	Same.....Cut-off valve-gear and valve.....	July 5, 1870
108,619	Noyes, George G., Worcester, Mass. Canceling-stamp.....	Oct. 25, 1870
104,632	Noyes, Horatio J., and Samuel C. Tallcott, Ashtabula, Ohio. Portable apparatus for curing meats, and for other purposes.....	June 21, 1870
	Noyes, Joseph P., and John E. Plummer. (See Plummer & Noyes.)	
101,761	Noyes, Person, Lowell, Mass. Tank for storing oil.....	April 12, 1870
107,951	Same.....Apparatus for drawing and measuring oil.....	Oct. 4, 1870
98,996	Noyes, Walter B., assignor to self and C. S. Baker, Manchester, N. H. Lath-machine.....	Jan. 18, 1870
110,587	Nuelle, William and Joseph F., St. Louis, Mo. Machine for dressing fence-pickets.....	Dec. 27, 1870
	Numsen, William N., and Julius Wolff. (See Wolff & Numsen.)	
100,183	Nusbaum, A. B. C., Sacramento, Cal. Cultivator.....	Feb. 22, 1870
107,093	Nute, James, Boston, Mass. Apparatus for attaching standing-rigging to masts.....	Sept. 6, 1870
107,094	Nute, James E., Lincoln, Maine. Hand-loom.....	Sept. 6, 1870
108,175	Nutt, Isaiah, assignor to self, John Wharton, and Abraham C. Wheaton, Newark, N. J. Machine for forming hat-bodies.....	Oct. 11, 1870
100,794	Nuttall, James, assignor to Thomas Isherwood and Charles Maxson, England. Tappet-chain for looms. (Antedated March 4, 1870).....	Mar. 15, 1870
106,075	Nutter, George W., assignor to self and Charles Keeton, Santa Cruz, Cal. Baling-press.....	Aug. 2, 1870
103,917	Nutting, Rufus, Randolph, Vt. Lamp gas-burner.....	June 7, 1870
	Nye, George H., and James H. Pattee. (See Pattee & Nye.)	
105,833	Nye, Sherman R., Barre, Mass. Horse hay-rake.....	July 26, 1870
106,862	Oakes, Edward, Richmond, Ind. Aërial-car. (Antedated Aug. 25, 1870).....	Aug. 30, 1870
	Oakley, Jesse. (See Leslie, George M., assignor.) (Reissue.)	
	Oakman, Joseph W. (See Johnson, Josce, assignor.)	
105,834	Oakman, Samuel, Boston, Mass. Telegraph-insulator.....	July 26, 1870
99,697	Oatley, William R., Rochester, N. Y. Stove-leg.....	Feb. 8, 1870
102,962	Obergfell, Dominick, Wheeling, W. Va. Noodle-machine.....	May 10, 1870
	Oberly, C., and E. G. Shortt. (See Shortt & Oberly.)	
104,633	Obermann, August W., Chicago, Ill. Bed-spring.....	June 21, 1870
99,225	Obermeyer, Frank Z., and William Halle, Milwaukee, Wis. Base-burning stove. (Antedated Jan. 20, 1870).....	Jan. 25, 1870
	Obernesser, Jacob, and Charles Diebold. (See Diebold & Obernesser.)	
109,541	Obitts, William H., Elyria, Ohio. Cheese-vat.....	Nov. 22, 1870
4,001	Oblinger, Christian, Camden, N. J. Lamp-chimney cleaner.....(Design).....	April 26, 1870
102,579	O'Brien, James, Geneseo, Ill. Rosette for bridles.....	May 3, 1870
108,725	O'Brien, James, Cedar Rapids, Iowa. Rosette for bridles.....	Oct. 25, 1870
	O'Brien, John. (See Marais, Alexis, assignor.)	
105,591	O'Brien, Louis E., Latrobe, Pa. Check-valve.....	July 19, 1870
104,634	O'Brien, Thomas, Quincy, Mich. Running-gear for carriages.....	June 21, 1870
1-8,043	O'Brien, Thomas H., Providence, R. I. Cushion, mattress, &c.....	Oct. 4, 1870
101,303	O'Brien, William, and Henry Wentworth, Omaha, Nebr. Collar and hames.....	Mar. 29, 1870
102,034	Ockerlund, Nels, New York, N. Y. Rule and calculator.....	April 19, 1870
105,717	Same.....Adding-machine.....	July 26, 1870
104,988	Ockington, Benjamin Brooks, and Andrew J., Stratford, N. H. Arbor for turning clothes-pins.....	July 5, 1870
100,060	O'Connon, Daniel C., New York, N. Y. Stay for trunk-lids.....	Feb. 22, 1870
105,592	O'Connor, George and Haines, Mishawaka, Ind. Grinding-mill.....	July 19, 1870
109,542	Same.....Millstone-dress.....	Nov. 22, 1870
102,580	O'Connor, James, Jackson, Mo. Carriage-hub.....	May 3, 1870
	O'Connor, Thomas J. (See Williams, William L., assignor.) (Reissue.)	
108,620	O'Dell, Abiel, Napanee, Canada. Clothes-wringer.....	Oct. 25, 1870
108,818	Same.....Clothes-drier.....	Nov. 1, 1870
105,235	Odell, Jacob, Petroleum Centre, Pa. Sucker-rod coupling.....	July 12, 1870
106,196	Same.....Scrubbing-brush.....	Aug. 9, 1870
109,929	Odell, John K., and William S. Little, assignors to G. W. Coe, Deckertown, N. J. Cast-iron plow.....	Nov. 1, 1870
106,952	Odenkirchen, Henry, New Haven, Conn. Package for tea and coffee.....	Aug. 30, 1870
	Odiorno, Thomas. (See Morse, Andrew, assignor.)	
	O'Donnell, John J. (See Jacob, James W., assignor.)	
107,285	O'Donnell, Norman, Cincinnati, Ohio. Cutting or lap board.....	Sept. 13, 1870
99,937	Ochl, Charles A., Portsmouth, N. H. Lozenge-machine.....	Feb. 15, 1870
101,498	Oerllein, George, Utica, Minn. Horse-power.....	April 5, 1870
109,441	Same.....Harvester-rake.....	Nov. 22, 1870
107,403	Oertel, Henry, Memphis, Tenn. Apparatus for carbureting air.....	Sept. 13, 1870
4,263	Oesterling, John, Wheeling, W. Va. Glass-ware.....(Design).....	July 26, 1870
	Ofeldt, F. W., and A. W. Almqvist. (See Almqvist & Ofeldt).....(Two cases.)	
	O'Ferrall, John, and Thomas L. Daniels. (See Crawford, A. B., assignor.) (Re-issue.)	
	Offinzer, James, and Thomas C. Martin. (See Martin & Offinzer.)	
106,717	O'Friel, James, Brooklyn, N. Y. Treating bituminous substances for pavements, &c.....	Aug. 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,438	Ogborn, Harrison, Richmond, Ind. Clothes-line fastener. (Antedated Feb. 25, 1870).....	Mar. 1, 1870
100,552	Same.....Fanning-mill and grain-separator.....	Mar. 8, 1870
103,481	Same.....Straw-cutter.....	July 19, 1870
106,395	Ogborn, Harrison, assignor to Samuel Watson, Richmond, Ind. Fanning-mill.....	Aug. 16, 1870
109,654	Ogden, Floyd, Fisherville, Ky. Churn-dasher.....	Nov. 29, 1870
108,044	Ogden, Floyd, assignor to self and J. T. Rose, Fisherville, Ky. Corn-planter and marker.....	Oct. 4, 1870
105,120	Ogden, Marcus G., Cincinnati, Ohio. Scroll-saw.....	July 5, 1870
	Ogden, Nathaniel, and Robert Potts. (See Potts & Ogden.).....	
	Ogden, William, and Seth L. King. (See King & Ogden.).....	
108,933	Ogden, Zina S., Glen's Falls, N. Y. Device for cutting screw-threads.....	Nov. 1, 1870
104,487	Oglesby, William B., Ridge Prairie, Ill. Grain-binder.....	June 21, 1870
108,508	Oglesby, William W., Benton County, Oregon. Medical compound. (Ante-dated Oct. 8, 1870).....	Oct. 18, 1870
108,599	O'Hara, Charles E., New York, N. Y. Manufacture of paper.....	Oct. 18, 1870
105,236	O'Hara, Charles M., Bolivar, Tenn. Shoe-string fastener.....	July 12, 1870
106,076	Ohlsen, Henry Dietrich, Chicago, Ill. Coach-cleaning sponge.....	Aug. 2, 1870
110,388	Ohmer, Augustus J., Hamilton, Ohio. Lawn-mower.....	Dec. 20, 1870
108,289	Okey, Joseph B., assignor of one-half interest to Ferdinand A. Lehr, Indianapolis, Ind. Fruit-drier.....	Oct. 11, 1870
	Okra Paper Company. (See Read, John B., assignor).....(Reissue.)	
4,042	Old, James, Pittsburgh, Pa. Grate.....(Reissue.)	June 21, 1870
110,274	Same.....Furnace-stove.....	Dec. 20, 1870
100,553	Olden, Thomas L., Brooklyn, N. Y. Purifying acetic acid.....	Mar. 8, 1870
102,424	Oldfield, Edwin, Norwich, Conn. Suspender.....	April 26, 1870
104,340	Olds, Henry, Syracuse, N. Y. Extension-table slide.....	June 14, 1870
109,339	Olds, Walker, Albany, Ill. Offbearing-truck for brick-machines. (Antedated Nov. 5, 1870).....	Nov. 15, 1870
109,143	Oliphant, John, assignor to F. H. Oliphant, Spring Hill Furnace, Pa. Railroad-car stove.....	Nov. 8, 1870
104,341	Oliver, Charles F., assignor to Nathaniel Cummings, Lynn, Mass. Piano.....	June 14, 1870
106,396	Same.....Piano-action.....	Aug. 16, 1870
109,442	Oliver, Daniel B., Cambria, N. Y. Grafting-awl.....	Nov. 28, 1870
99,938	Oliver, David, Galesburgh, Ill. Hedge-trimmer.....	Feb. 15, 1870
110,065	Oliver, Ebenezer, New York, N. Y. Animal-trap.....	Dec. 13, 1870
	Oliver, Henry W., Jr., and William J. Lewis. (See Lewis & Oliver.).....	
109,241	Oliver, James L., Boston, Mass. Curtain-fixture.....	Nov. 15, 1870
101,032	Oliver, Paul A., New York, N. Y. Machine for pressing and graining powder.....	Mar. 22, 1870
	Oliver, Richard. (See De Forest, David W., assignor.).....	
106,397	Olleman, Ezra A., Mooresville, Ind. Ground-pulverizer.....	Aug. 16, 1870
98,680	Olmsted, Joseph, Knoxville, Ill. Electro-magnetic car-brake.....	Jan. 18, 1870
100,650	Olmsted, L. N., Brooklyn, N. Y. Card-rack.....	Mar. 8, 1870
4,169	Olmsted, William R., Fayette, N. Y. Breast-collar for harness.....(Design).....	June 21, 1870
104,989	Olney, Hiram W., Pittsburgh, Pa. Method of hanging window-shades.....	July 5, 1870
109,043	O'Malley, Joseph, Montreal, Canada. Stove-pipe grate.....	Nov. 8, 1870
106,863	O'Meara, Timothy, assignor through mesne assignments to the United States Gas Company, Brooklyn, N. Y. Apparatus for producing gas from coal.....	Aug. 30, 1870
4,189	Omensetter, Elhanan, assignor to Samuel Macferran, Philadelphia, Pa. Iron-railing.....(Design).....	June 28, 1870
4,190	Same.....same.....(Design).....	June 28, 1870
4,191	Same.....same.....(Design).....	June 28, 1870
4,192	Same.....same.....(Design).....	June 28, 1870
4,193	Same.....same.....(Design).....	June 28, 1870
4,194	Same.....same.....(Design).....	June 28, 1870
4,195	Same.....same.....(Design).....	June 28, 1870
4,196	Same.....same.....(Design).....	June 28, 1870
	Omensetter, Elhanan, and Samuel Macferran. (See Macferran & Omensetter.) (Design.).....	
101,907	O'Neil, John H., Cleveland, Ohio. Hanging-basket.....	April 12, 1870
99,939	O'Neil, John K., Kingston, N. Y. Horse hay-rake.....	Feb. 15, 1870
3,876	Same.....Horse hay-fork.....(Reissue).....	Mar. 8, 1870
104,342	O'Neil, Nelson, assignor to self and Edward O'Neil, jr., Purchase Line, Pa. Straw-cutter.....	June 14, 1870
106,953	O'Neill, John M., Clinton, Iowa. Railway-car seat.....	Aug. 30, 1870
103,647	Onslow, Adolph, Jersey City, N. J. Disengaging valve-gear for locomotives.....	May 31, 1870
101,653	Oothondt, Josiah, Minneapolis, Minn. Lath-machine.....	April 5, 1870
104,875	Same.....Hitching-post.....	June 28, 1870
110,389	Orbeton, William W. S., Bradford, Mass. Combined parlor and cooking stove.....	Dec. 20, 1870
109,930	Orchard, Thomas, Lincoln, Cal. Coupling for earth-boring augers.....	Dec. 6, 1870
109,242	Ord, William, Brooklyn, N. Y. Piston-packing.....	Nov. 15, 1870
98,618	Ordway, Ira J., West Edmeston, N. Y. Device for measuring and laying out garments.....	Jan. 4, 1870
98,517	Ordway, John M., assignor to Sewell Brackett, Jamaica Plains, Mass. Manufacture of artificial stone. (Antedated Dec. 18, 1869).....	Jan. 4, 1870
105,237	O'Reardon, Mathew, New York, N. Y. Pen-rack.....	July 12, 1870
110,275	O'Reilly, Michael, New York, N. Y. Preparation of cod-liver oil.....	Dec. 20, 1870
107,801	Orewiler, Michael, assignor to self and John R. Aucherman, Bucyrus, Ohio. Automatic gate.....	Sept. 27, 1870
106,978	Orn, John, Paducah, Ky. Machine for elongating and spreading saw-teeth.....	Aug. 30, 1870
	Ormrod, Ralph. (See Bothwell, Samuel, assignor.).....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,044	Ormsbec, Marcus, Brooklyn, N. Y. Pin-cushion .....	Nov. 8, 1870
104,191	Ormsby, John H., and Robert S. Harton, Holden, Mo. Churn.....	June 14, 1870
107,404	Ormsby, Justin H., Dixon, Ill. Thill-coupling .....	Sept. 13, 1870
	Orr, Frank M., <i>et al.</i> (See Jackson, Richard A., assignor.)	
	Orr, George W. (See Babbitt, Samuel, assignor.)	
104,057	Orr, John M., Leesburgh, Va. Railway-rail chair and joint .....	June 7, 1870
	Orr, William D., and Robert E. Tolar. (See Tolar & Orr.)	
	Orting, Sophus, and P. J. McK. (See Sorenson, Soren, assignor.)	
105,593	Ortiz, Carlos, and Hilario Valladares, Matanzas, Cuba. Railway-rail cleaner....	July 19, 1870
98,619	Ortlieb, Frederick O., Green Point, N. Y. Rotary engine .....	Jan. 4, 1870
108,045	Ortlip, Andrew, East Vincent, Pa. Mill-stone bush and bearing .....	Oct. 4, 1870
100,657	Orton, Merrill S., and Peter B. Stiles, Galesburgh, Ill. Dish-washer.....	Mar. 8, 1870
101,304	Orton, M. S., assignor to Zimri Pond, Galesburgh, Ill. Pump.....	Mar. 29, 1870
106,864	Osborn, Benjamin F., assignor to T. H. Jones & Co., Nashville, Tenn. Cultivator .....	Aug. 30, 1870
100,658	Osborn, Bennet, New York, N. Y. Paper box .....	Mar. 8, 1870
103,766	Osborn, Charles K., Dixon, Ill. Shutter-fastener .....	May 31, 1870
104,874	Osborn, Francis M., Port Chester, N. Y. Tongue-holder for dentists.....	June 28, 1870
104,635	Osborn, George Kellogg, New York, N. Y. Argand oil-burner.....	June 21, 1870
107,802	Osborn, George R., Bridgeport, Conn. Bird-cage .....	Sept. 27, 1870
137,952	Osborn, George W., Parkville, Mich. Tie for bags, grain, &c .....	Oct. 4, 1870
107,709	Osborn, Henry Clay, Clark County, Ohio. Corn plow and planter.....	Sept. 27, 1870
109,340	Osborn, Ornan, Erie, Pa. Plow .....	Nov. 15, 1870
106,398	Osborn, William Edwin, Brooklyn, N. Y. Hand-stamp .....	Aug. 16, 1870
	Osborne, Joseph, and Richard F. Knox. (See Knox & Osburn.)	
	Osburn, Harrison, and William G. Dunnaway. (See Dunnaway & Osborne.)	
105,238	Osgood, Benjamin F., Coloma, Mich. Apparatus for staking horse-powers.....	July 12, 1870
108,819	Osgood, Franklin R., Grand Rapids, Mich. Folding window-blind .....	Nov. 1, 1870
105,971	Osgood, James M., assignor to self and Flagg & Osgood, Somerville, Mass. Apparatus for automatically regulating the flow of gas used in heating vulcanizers, &c .....	Aug. 2, 1870
107,710	Osgood, Jason C., Troy, N. Y. Ditching-machine .....	Sept. 27, 1870
101,654	Osgood, John Felt, Boston, Mass. Desulphurizing ores .....	April 5, 1870
103,836	Osgood, Luke B., Shelby, Mich. Washing-machine .....	Dec. 6, 1870
106,954	Osgood, Otis S., Burlington, Iowa. Bed-bottom .....	Aug. 30, 1870
104,757	Osgood, Ralph Robert, Troy, N. Y. Dredging-machine.....	June 28, 1870
107,529	Same.....Ditching-machine .....	Sept. 20, 1870
	Osgood, Smith & Co. (See Smith, Samuel F., assignor.)	
	Same.....(See Woodburn & Smith, assignors.)	
99,785	Ost, Elias G., Shelburne Falls, Mass. Fastening handle to cutlery .....	Feb. 15, 1870
106,197	Osterkamp, Hermann, Prussia. Rock-drill .....	Aug. 9, 1870
103,918	Ostrom, Henry W., Grand Rapids, Mich. Cultivator .....	June 7, 1870
102,308	Otis, Charles R., Chicago, Ill. Paint-pail .....	April 26, 1870
	Otis, Charles R., <i>et al.</i> (See Newell, Daniel P., assignor.)	
104,488	Otis, Joel A., Rutland, N. Y. Pail-car .....	June 21, 1870
100,659	Otis, John L., Leeds, Mass. Emery-wheel .....	Mar. 8, 1870
105,121	Otstot, John D., Springfield, Ohio. Combined bevel, square, rule, &c .....	July 5, 1870
107,711	Ott, Adolph, New York, N. Y. Treating tin scrap for the manufacture of stannate of potash, &c .....	Sept. 27, 1870
107,712	Same.....Furnace for smelting scrap-iron.....	Sept. 27, 1870
4,211	Otterson, Thomas Garrison, assignor to S. B. Rowley, Philadelphia, Pa. Fruit-jar .....	Dec. 20, 1870
106,610	Ottinger, Charles, Philadelphia, Pa. Automatic passenger-register for vehicles..	Aug. 23, 1870
	Otto, Franz. (See Morganstern, William, assignor.)	
101,305	Otto, H. C. S., New York, N. Y. Medical compound.....	Mar. 29, 1870
105,482	Otto, Julius E., Elmore, Ohio. Shoe-fastener.....	July 19, 1870
101,908	Outten, George Franklin, Norfolk, Va. Hinge .....	April 12, 1870
	Outwater, Jacob D. C., <i>et al.</i> (See James, John Dawson, jr., assignor.) (Two cases.)	
104,876	Overbagh, Addison, Scranton, Pa. Equalizing-bar for railway-car trucks.....	June 28, 1870
102,581	Overend, John A. T., San Francisco, Cal. Boiler-furnace. (Antedated April 23, 1870) .....	May 3, 1870
107,803	Oviatt, Luman B., Brooklyn Village, Ohio. Cover for cooking utensils.....	Sept. 27, 1870
103,919	Owen, Amos D., Thorntown, Ind. Brand for canceling stamps.....	June 7, 1870
103,490	Owen, Charles N., Salem, Ohio. Harvester.....	May 24, 1870
107,804	Same.....Harvester-reel .....	Sept. 27, 1870
103,767	Owen, Demus J., Springfield, Pa. Animal-trap .....	May 31, 1870
3,815	Owen, George B., Winsted, Conn. Clock-frame.....(Design) .....	Jan. 11, 1870
106,865	Owen, Silas R., Stewartsville, Mo. Earth-scraper .....	Aug. 30, 1870
	Owen, William M., and George W. Sizer. (See Sizer & Owens.)	
105,239	Owens, Thomas W., Granville, Ohio. Farm-fence.....	July 12, 1870
105,483	Same.....Clothes-line clamp.....	July 19, 1870
107,095	Same.....Fence .....	Sept. 6, 1870
110,066	Owings, Wilson S., Pan Handle, W. Va. Hitching-post .....	Dec. 13, 1870
103,361	Oxer, William James, Williamsport, Ind. Cutter-bar for harvesters.....	May 24, 1870
	Pacific Pump-Manufacturing Company. (See Stedman, Nathan, assignor.) (Re-issue.)	
103,227	Pack, George J., New York, N. Y. Preparing gold for dentists' use.....	May 17, 1870
108,385	Packard, Elizabeth L., assignor to Lucius H. Packard, Stoughton, Mass. Cooking utensil .....	Oct. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,718	Packard, Isaac T., Chicago, Ill. Reed musical instrument.....	July 26, 1870
99,466	Packard, Sumner, Grafton, Mass. Boot and shoe shave.....	Feb. 1, 1870
109,837	Paddington, George, Waubeck, Iowa. Corn-planter.....	Dec. 6, 1870
107,286	Paddock, Harvlin, assignor to self and Franklin Fairbanks, St. Johnsbury, Vt. Registering weighing-scale.....	Sept. 13, 1870
103,491	Padon, John B., Troy, Ill. Washing-machine.....	May 24, 1870
3,877	Page, Clark D., Rochester, N. Y. Lime-kiln..... (Reissue)	Mar. 8, 1870
3,934	Page, Daniel A., Dover, N. H. Trade-mark..... (Design)	April 19, 1870
104,760	Page, David B., Henry, Ill. Case for seissors. (Antedated June 16, 1870).....	June 28, 1870
104,990	Page, Edwin K., Havana, N. Y. Folding-stereoscope.....	July 5, 1870
	Page, Ira M., and Louis N. Fletcher. (See Fletcher & Page.)	
106,280	Page, James T., Rochester, N. Y. Broiler.....	Aug. 9, 1870
4,218	Same..... same..... (Reissue)	Dec. 27, 1870
	Page, Philip S. (See Williams, Thomas S., assignor.)	
	Page, Philip Sidney, and Thomas Scott Williams. (See Taber, Freeman Augustus, assignor.)	
	Same..... (See Williams & Taber, assignors.)	
99,698	Page, T. C., and George W. Hadley, Chicopee, Mass. Calipers.....	Feb. 8, 1870
104,991	Page, Uriah, Ringgold, La. Press for pressing cotton or hay.....	July 5, 1870
	Page, Wilder & Co. (See Webster, John T., assignor.) (Two cases.) (Design.)	
3,901	Page, William H., assignor to William H. Page & Co., Norwich, Conn. Type-Design.....	Mar. 15, 1870
3,902	Same..... Type..... (Design)	Mar. 15, 1870
3,903	Same..... same..... (Design)	Mar. 15, 1870
3,904	Same..... same..... (Design)	Mar. 15, 1870
3,905	Same..... same..... (Design)	Mar. 15, 1870
4,279	Same..... same..... (Design)	Aug. 9, 1870
4,280	Same..... same..... (Design)	Aug. 9, 1870
4,281	Same..... same..... (Design)	Aug. 9, 1870
4,282	Same..... same..... (Design)	Aug. 9, 1870
4,283	Same..... same..... (Design)	Aug. 9, 1870
4,284	Same..... Type-border..... (Design)	Aug. 9, 1870
4,285	Same..... same..... (Design)	Aug. 9, 1870
103,931	Page, William I., East Boston, Mass. Metallic cartridge. (Antedated Nov. 26, 1870).....	Dec. 6, 1870
104,636	Page, William I., assignor to self and Charles E. Robinson, Boston, Mass. Revolving fire-arm.....	June 21, 1870
4,296	Pages, Jules F., San Francisco, Cal. Hand-stamp..... (Design)	Aug. 16, 1870
105,240	Paget, Arthur, England. Machine for tightening ropes, &c. (Patented in England April 21, 1868).....	July 12, 1870
104,192	Pagett, Alexander W., Springfield, Ohio. Vegetable cutter and scraper.....	June 14, 1870
105,835	Pagett, George W., Oxford, Ind. Show-case for ribbons, &c.....	July 26, 1870
	Pahlman, H. J., et al. (See Wolff, Ludwig, assignor.)	
100,184	Paige, David O., Detroit, Mich. Safe.....	Feb. 22, 1870
103,492	Paige, James W., Rochester, N. Y., and Dexter Reynolds, Albany, N. Y. Boiler for steam-heaters.....	May 24, 1870
	Same..... (See Reynolds & Paige.)	
4,541	Paige, William H., Springfield, Mass. Railway-car seat-lock..... (Design)	Dec. 27, 1870
105,972	Paillard, Amede, assignor to M. I. Paillard & Co., Switzerland. Musical box.....	Aug. 2, 1870
93,881	Paine, Clinton L., Young America, Ill. Steam culinary-apparatus.....	Jan. 18, 1870
100,317	Paine, Elias A., Grafton, Mass. Shuttle for looms.....	Mar. 1, 1870
98,792	Paine, Enoch H., Louisville, Ky. Suspending upper berth in sleeping-cars.....	Jan. 11, 1870
102,147	Paine, Henry J., assignor to self and Joseph Kelly, Providence, R. I. Safety-valve.....	April 19, 1870
101,306	Paine, Henry M., Newark, N. J. Rotary hydro-pneumatic pump. (Antedated Feb. 23, 1870).....	Mar. 29, 1870
102,856	Paine, Henry M., assignor to self and M. S. Frost, Newark, N. J. Electro-magnet.....	May 10, 1870
103,228	Same..... Electro-magnetic engine.....	May 17, 1870
103,229	Same..... Magnetic engine.....	May 17, 1870
103,230	Same..... Electro-magnet.....	May 17, 1870
103,231	Paine, Henry M., assignor of one-half interest to M. S. Frost, Newark, N. J. Construction of electro-magnets.....	May 17, 1870
103,768	Same..... Sector electro-magnet.....	May 31, 1870
104,992	Painter, William, Baltimore, Md. Seed-sower. (Antedated June 23, 1870).....	July 5, 1870
99,587	Palliser, W., assignor to Joseph Valentine Smedley, England. Railway-rail fastening.....	Feb. 8, 1870
103,046	Palmenberg, Joseph R., New York, N. Y. Show-stand.....	Oct. 4, 1870
99,340	Palmer, Aaron and Charles W., Brockport, N. Y. Harvester-rake.....	Feb. 1, 1870
109,922	Same..... same.....	Mar. 15, 1870
	Palmer, Amos B., and William C. Jillson. (See Jillson & Palmer.)	
105,363	Palmer, Charles H., New York, N. Y. Bobbin-winder for sewing-machines.....	July 12, 1870
109,753	Palmer, Charles H., assignor to A. F. Sawyer, William H. Sharp, Jacob Regensburger, Charles D. Carter, and Mary P. Carpenter, New York, N. Y. Needle and its carrying-arm for sewing-machines.....	Nov. 29, 1870
98,793	Palmer, Charles W., Lynn, Mass., and Charles Houghton, Boston, Mass. Felt shoe.....	Jan. 11, 1870
105,836	Palmer, Charles W. and Henry E., Lynn, Mass., and Charles Houghton, Boston, Mass., assignors to Charles Houghton. Manufacture of hollow felted articles.....	July 26, 1870
101,655	Palmer, Frederic Ingersoll, Youngstown, Ohio. Belt-awl.....	April 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,699	Palmer, George F., Rochester, N. H. Machine for picking cotton and other waste	Feb. 8, 1870
102,425	Palmer, George N., Greene, N. Y. Churn	April 26, 1870
105,484	Palmer, Henry L., Stillwater, N. Y. Preserving various articles of food	July 19, 1870
105,485	Same. Preserving vegetable extracts	July 19, 1870
103,726	Same. Flue-cleaner for cooking-stoves	Oct. 25, 1870
105,973	Palmer, Isaac H., Lodi, Wis. Harvester	Aug. 2, 1870
	Palmer, James. (See Powers, D. J., assignor.) (Reissue.)	
110,276	Palmer, Jason J., Pittsburgh, Pa. Vapor-burner	Dec. 20, 1870
109,932	Palmer, Jay R., assignor to self and James H. Hatch, Mariposa, Cal. Car-coupling	Dec. 6, 1870
109,655	Palmer, John, Randolph, Mass. Sewing-machine	Nov. 29, 1870
110,587	Palmer, John S., Providence, R. I. Finger ring	Dec. 27, 1870
	Palmer, Milton J., et al. (See Mellen, Van Sandt & Palmer.)	
101,155	Palmer, Moses, jr., Lynn, Mass. Shirt-yoke	Mar. 22, 1870
103,232	Same. Boston, Mass. Shirt-bosom	May 17, 1870
105,436	Palmer, Moses, jr., Boston, Mass., and E. Willoughby Anderson, Washington, D. C. Pattern for measuring the body for garments	July 19, 1870
101,656	Palmer, Oliver, Cincinnati, Ohio. Trace-fastening	April 5, 1870
	Palmer, Orlando A. (See Stanley, Edgar A., assignor.)	
	Palmer, Philip A., and James Rigby. (See Rigby & Palmer) (Two cases.)	
104,637	Palmer, Samuel L. and George E., Sandy Hill, N. Y. Lath-machine	June 21, 1870
109,045	Palmer, Sidney W. and Josiah F., Auburn, N. Y. Apparatus for towing canal-boats	Nov. 8, 1870
102,701	Palmer, Theodore J., New York, N. Y. Rocking and reclining chair	May 3, 1870
99,940	Palmer, William H., Rockville, R. I. Shingle-machine	Feb. 15, 1870
103,769	Pampel, Frederick W., assignor to self and Thomas H. Schaeffer, Frederick, Md. Thrashing-machine	May 31, 1870
106,198	Panknin, Charles F., Charleston, S. C. Ink	Aug. 9, 1870
107,713	Same. Tanning	Sept. 27, 1870
109,656	Same. Compound for bating hides and skins. (Antedated Nov. 26, 1870).	Nov. 29, 1870
106,718	Pannetrat, Francois Martin, France. Solar time instrument	Aug. 23, 1870
	Papo, Gevert. (See Holliday, Isaac, assignor.)	
104,058	Paradis, Joseph, and William H. Drew, Brooklyn, N. Y. Machine for untwisting and separating hair-rope	June 7, 1870
99,105	Paraf, Alfred, New York, N. Y. Method of fixing pigments to fibrous and textile materials	Jan. 25, 1870
109,341	Paraf, Alfred, assignor to Edward Sabine Renwick, New York, N. Y. Manufacture and application of colors for printing and dyeing	Nov. 15, 1870
110,277	Paraf, Alfred, assignor to Edward S. Renwick, trustee, New York, N. Y. Manufacture of colors, and their application to fabrics	Dec. 20, 1870
108,047	Parcell, Peter B., Ashmore, Ill. Shovel-plow	Oct. 4, 1870
109,443	Parham, Charles, Philadelphia, Pa. Sewing-machine	Nov. 22, 1870
103,770	Parish, Edward W., assignor to self and John Parish, Boston, Mass. Inner sole for boots and shoes	May 31, 1870
100,660	Park, Andrew G., Leon, N. Y. Sawing-machine	Mar. 8, 1870
106,611	Park, Gilbert G., Xenia, N. Y. Hay-loader	Aug. 23, 1870
101,378	Park, Josiah B., North Platte, Nebr. Turbine water-wheel	Mar. 21, 1870
106,199	Park, Robert W., Philadelphia, Pa. Vapor-burner	Aug. 9, 1870
106,200	Same. same.	Aug. 9, 1870
	Park, Sidney W., Albany, N. Y., and Edgar S. Ells, Tremont, N. Y. Rotary knitting-machine (Extension)	July 22, 1870
110,491	Park, Webster, Norwich, Conn. Key for locks. (Antedated Dec. 15, 1870)	Dec. 27, 1870
	Parker, Abram, et al. (See Dyer, Parker & Way.)	
	Parker, A. S. (See Beardsley, George F., assignor.)	
105,241	Parker, Caleb A., New Orleans, La. Brick-kiln	July 12, 1870
	Parker, Charles. (See Brown, Thomas W., assignor.)	
	Same. same. (Reissue.)	
	Same. (See Boynton, Edward S., assignor.)	
	Same. (See Jerald, Bennet, assignor.) (Design.)	
	Same. (See Geer, George, assignor.)	
	Same. (See Buckley, Chauncey, assignor.)	
	Same. (See Green, Charles, assignor.)	
102,426	Parker, Charles F., Greenfield, Ohio. Dumping-wagon	April 26, 1870
107,714	Parker, Charles F., assignor to Joseph Parker, Greenfield, Ohio. Ironing-machine	Sept. 27, 1870
98,620	Parker, Charles H., Boston, Mass. Bridge	Jan. 4, 1870
100,185	Same. same	Feb. 22, 1870
101,379	Same. Screw-piling	Mar. 29, 1870
103,233	Same. Bridge	May 17, 1870
99,941	Parker, Edward, Plymouth, Conn. Scaffold-bracket (Extension)	Feb. 15, 1870
	Same. Buckle for wearing-apparel	Aug. 24, 1870
105,719	Parker, Eliphalet H., Bucksport, Maine. Planking-set. (Antedated July 18, 1870)	July 23, 1870
107,530	Parker, Emery, New Britain, Conn. Track-rail for sliding-doors	Sept. 20, 1870
3,833	Parker, Emory, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Sash or shutter lift. (Design.)	Feb. 1, 1870
105,487	Same. Machine for milling the knuckles of butt-hinges	July 19, 1870
105,488	Same. Machine for centering butts	July 19, 1870
107,805	Parker, Ezra, Beverly, Ohio. Water-wheel	Sept. 27, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,837	Parker, Isaac J., Buffalo Grove, Iowa. Hay-loader.....	July 26, 1870
109,444	Parker, John, Dubuque, Iowa. Fly-trap.....	Nov. 22, 1870
110,492	Parker, La Fayette, Davenport, Iowa. Grain-binder.....	Dec. 27, 1870
	Parker, Le Grand. (See Taylor, Samuel H., assignor)..... (Two cases.)	
101,762	Parker, Samuel J., Williamsport, Pa. Boiler-feeder.....	April 12, 1870
4,041	Same..... Wheel-holding block for a caster..... (Design)	May 17, 1870
106,612	Parker, Samuel W., Somerville, Mass. Piano.....	Aug. 23, 1870
107,622	Parker, Stillman, Altoona, Pa. Hoop-shaving machine.....	Sept. 29, 1870
108,176	Parker, Thomas B., Linesville, Pa. Combined plow and scraper for roads.....	Oct. 11, 1870
102,582	Parker, William M., Boston, Mass. Fire-extinguisher. (Antedated April 19, 1870)	May 3, 1870
98,704	Parkhurst, Stephen R., assignor to Emily R. Parkhurst and Warren H. Holt, Mount Clair, N. J. Picker for wool.....	Jan. 11, 1870
98,705	Same..... Cotton-gin.....	Jan. 11, 1870
	Parkhurst, Varanus P. (See Calnan, John B., assignor.)	
101,763	Parkhurst, Ziba, Milford, Mass. Machine for burring and cleaning wool, &c....	April 12, 1870
3,877	Parkin, William, assignor to Reed & Barton, Taunton, Mass. Cake-basket or fruit-tray..... (Design)	Mar. 1, 1870
4,211	Parkin, William, assignor to Henry G. Reed, George Brabrook, and Henry H. Fish, Taunton, Mass. Tea-service..... (Design)	July 5, 1870
4,437	Parkin, William, assignor to Reed & Barton, Taunton, Mass. Table caster. (Design)	Oct. 25, 1870
4,438	Same..... Caster-bottle..... (Design)	Oct. 25, 1870
	Parkinson, John. (See Entwistle, James, assignor.)	
103,493	Parks, Austin S., Winchendon, Mass. Tool for fitting bottoms to fruit-baskets	May 24, 1870
102,309	Parks, Caroline, Milan, Ohio. Swift and reel.....	April 26, 1870
	Parkton, Charles H. (See Blake, William, assignor.)	
105,122	Parmelee, William A., assignor to self and Philip P. Ahren, New Haven, Conn. Adjustable link for water-wheel gates.....	July 5, 1870
108,510	Parmelee, Dubois D., New York, N. Y. Coating the interior of pipes, tubes, &c., with silver or other metals, by the electro-depositing process.....	Oct. 18, 1870
102,148	Parmelee, Dubois D., assignor to Walter K. Marvin, New York, N. Y. Treating tin-scrap to obtain useful products.....	April 19, 1870
99,226	Parmelee, H., assignor to Edward D. Peck, Philadelphia, Pa. Adding-machine	Jan. 25, 1870
	Parmenter, Isaac W., and Thomas J. McArthur. (See Geraghty, Michael F., assignor.)	
98,997	Parnell, George, Ontario, N. Y. Feed-cutter.....	Jan. 18, 1870
107,806	Parrish, Nathan, Kalamazoo, Mich. Heating-stove. (Antedated Sept. 21, 1870)	Sept. 27, 1870
107,807	Same..... Hoisting-machine.....	Sept. 27, 1870
105,720	Parrott, Charles F., assignor to self and John F. Kohler, New York, N. Y. Treating and preserving grain in bulk.....	July 26, 1870
	Parrott, George B. (See Warren, Sylvester W., assignor.)	
	Parsons, Albert A., and John C. Crummy. (See Crummy & Parsons.)	
101,909	Parsons, Albion, Burlington, Iowa. Spool-thread case.....	April 12, 1870
104,343	Parsons, Charles Chauncey, New York, N. Y. Purifying alcohol and spirits.....	June 14, 1870
107,953	Parsons, James Seton. (See Winchester, Arthur St. Clair, assignor.)	
	Parsons, James S., assignor to self and Arthur S. Winchester, Windham, Conn. Wire.....	Oct. 4, 1870
102,310	Parsons, John H., Jonesville, Mich. Broom.....	April 26, 1870
105,364	Parsons, Joseph A., Cleveland, Ohio. Ditching-machine.....	July 12, 1870
102,149	Parsons, William B., Short Tract, Pa. Car-coupling.....	April 19, 1870
103,648	Partridge, Benjamin S., assignor to self and William A. Stafford, Pilatka, Fla. Wheel for tuners' beading-machine. (Antedated May 19, 1870)	May 31, 1870
99,227	Partridge, Hiram C., and James Preston, Bainbridge, N. Y. Post-auger.....	Jan. 25, 1870
101,156	Partridge, William, deceased, by Marie A. Partridge, administratrix, assignor to Walter A. Wood Mowing and Reaping Machine Company, Philadelphia, Pa. Harvester-rake.....	Mar. 22, 1870
98,518	Partz, August F. W., Oakland, Cal. Collecting gold from ores.....	Jan. 4, 1870
104,761	Patch, Asahel H., Hamilton, Mass. Clothes-drier.....	June 28, 1870
110,067	Patch, John L., assignor to self and E. F. Tilden, Charlestown, Mass. Bobbin-winder for sewing-machines.....	Dec. 13, 1870
4,007	Paterson, James, assignor to R. H. & B. C. Reeve, Elizabeth, N. J. Floor-cloth pattern..... (Design)	May 3, 1870
4,415	Paterson, James, assignor to Thomas Potter, Son & Company, Elizabeth, N. J. Oil-cloth pattern..... (Design)	Oct. 11, 1870
4,416	Same..... same..... (Design)	Oct. 11, 1870
	Paterson, Robert, and John Hamilton. (See Hamilton & Paterson.)	
	Paton, Thomas C. (See Root, John B., assignor)..... (Two cases.) (Reissue.)	
	Paton, Thomas C. Morton. (See Johnson & Hatchman, assignors.)	
99,467	Patric, C. E., Macedon, N. Y. Tooth for grain-drills.....	Feb. 1, 1870
110,390	Pattee, Gordon B., Ottawa, Canada. Saw-tooth swage.....	Dec. 20, 1870
103,076	Pattee, James H., and George H. Nye, assignors to selves, N. G. Graham, and H. H. Pattee, Monmouth, Ill. Steam vacuum-pump.....	May 17, 1870
109,933	Patten, Alphonso, assignor to self and Robert W. Rumery, Biddeford, Me. Shoe-lacing hook.....	Dec. 6, 1870
89,228	Patten, I. N., and D. G. Marden, Memphis, Tenn. Hay and cotton press.....	Jan. 25, 1870
110,278	Patten, Isaac N., and Eli W. Long, Shelby County, Tenn. Cotton-press.....	Dec. 20, 1870
101,910	Patten, Julia W. D., Washington, D. C. Extension traveling-bag.....	April 12, 1870
104,919	Same..... Strawberry-huller.....	June 28, 1870
	Patterson, Andrew, and Leopold Klee. (See Klee & Patterson.)	
106,501	Patterson, Andrew, assignor to John Dean, Worcester, Mass. Nail.....	Aug. 16, 1870
4,133	Patterson, Elias C., Rochester, N. Y. Rein-holder for carriages..... (Reissue)	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,242	Patterson, Francis M., and Henry P. Miller, Seymour, Ind. Harness-makers' edging-tool	July 12, 1870
99,341	Patterson, James, San Francisco, Cal. Table-fork. (Antedated Jan. 29, 1870)...	Feb. 1, 1870
103,234	Patterson, James Willard, assignor to Sarah Ellen Patterson and John Ashcroft, New York, N. Y. Rendering lard	May 17, 1870
100,795	Patterson, John, Pittsburgh, Pa. Coal-car and truck-wheel	Mar. 15, 1870
98,794	Patterson, N. A., assignor to self, Thomas S. Ramsay, and D. E. Davenport, Nashville, Tenn. Communicating-apparatus for hotels	Jan. 11, 1870
101,499	Patterson, Oliver, South Dansville, N. Y. Potato-digger	April 5, 1870
105,243	Patterson, Robert, Catskill, N. Y. Steam-generator	July 12, 1870
	Patterson, William, and Andrew Brown. (See Brown & Patterson.)	
102,583	Pattison, Gurney C., Baltimore, Md. Anchor	May 3, 1870
102,534	Same same	May 3, 1870
	Pattison, Joseph N., and Charles E. Kemp. (See Kemp & Pattison.)	
103,235	Patton, Alexander G., Troy, N. Y. Cooking-stove	May 17, 1870
103,362	Patton, Samuel, assignor to self, John M. Long and Robert Allstatter, Chatsworth, Ill. Combined corn harvester and husker	May 24, 1870
106,955	Patton, William, Towanda, Pa. Latch for gates, &c. (Antedated Aug. 25, 1870)	Aug. 30, 1870
99,106	Patton, William P., and William A. Middleton; said Patton assignor to said Middleton, Harrisburgh, Pa. Corn-sheller	Jan. 25, 1870
106,399	Patton, William R., assignor of one-half interest to Denison Tisdale, Des Moines, Iowa. Car-coupling	Aug. 16, 1870
102,585	Patzauer, Max, New York, N. Y. Fly-trap	May 3, 1870
101,500	Paul, Almarin B., San Francisco, Cal. Apparatus for disintegrating ores	April 5, 1870
102,837	Same Self-discharging pulverizing-barrel	May 10, 1870
99,342	Paul, Seth D., Woonsocket, R. I. Self-acting mule for spinning	Feb. 1, 1870
108,934	Paullin, Arthur M., Atlanta, Ill. Washing-machine	Nov. 1, 1870
	Pausch, Louis, and James T. Guthrie. (See Guthrie & Pausch.)	
104,638	Pavy, Eugene, France. Manufacture of useful and ornamental fabrics from vegetable and animal fibers	June 21, 1870
	Pawtucket Hair-Cloth Company. (See Arnold & Lindsley, assignors.)	
3,793	Payne, Brigham, South Coventry, Conn. Machine for necking cartridge-shells. (Reissue)	Jan. 11, 1870
	Payne, D. C., and Isaac Ayres. (See Ayres & Payne.)	
102,702	Payne, Frederick C., New York, N. Y. Sofa-bed	May 3, 1870
106,613	Payne, George W., Memphis, Tenn. Gin for linting cotton	Aug. 23, 1870
3,879	Payne, Ira T., Chester, Conn. Auger (Reissue)	Mar. 15, 1870
106,956	Payne, Reuben L., Riceville, Va. Cultivator	Aug. 30, 1870
100,719	Payne, Sanford D., Kasota, Minn. Fruit-basket	Aug. 23, 1870
105,974	Payne, William H., Janesville, Wis. Grain-binder	Aug. 2, 1870
	Payson, James G., and Lyman B. Stilson. (See Stilson & Payson.)	
	Payton, Pat, and Benjamin P. Freeman. (See Freeman & Payton.)	
	Peabody, Augustus, et al. (See Calef, Joseph W., assignor.)	
99,343	Peabody, F., Louisville, Ky. Camera-screen	Feb. 1, 1870
	Peabody, Henry W., & Co. (See Abbott, Dexter D. W., assignor.)	
102,586	Peabody, Rufus H., Chelsea, Mass. Sewing-machine	May 3, 1870
106,866	Peacock, Thomas Brower, Dresden, Ohio. Lamp-shade holder	Aug. 30, 1870
	Peadro, Atweel L., and Jonathan L. Devol. (See Devol & Peadro.)	
105,838	Pearce, John W., Suisun, Cal. Spade and shovel	July 26, 1870
103,236	Pearl, Adolph, New York, N. Y. Manufacture of bunches for cigars	May 17, 1870
108,290	Same Mold for shaping and drying cigar-bunches	Oct. 11, 1870
102,587	Pearl, Oliver, Lawrence, Mass. Bobbin for spinning, &c.	May 3, 1870
109,243	Pearman, John W., and Joseph F. C. Lutz, Holden, Mo. Bolster for wagons	Nov. 15, 1870
106,221	Pearsall, George T., Apalachin, N. Y. Planing-machine	Aug. 9, 1870
99,942	Pearsall, William C., McMinnville, Tenn. Hub for carriage-wheels	Feb. 15, 1870
	Pearson, Alonzo B. (See Nicholls, Henry Austin, assignor.)	
101,307	Pearson, Samuel, Cincinnati, Ohio. Attachment for brushes	Mar. 29, 1870
101,157	Pearson, Walter H., Philadelphia, Pa. Dredging and excavating machine	Mar. 22, 1870
3,906	Pearson, William, and Peter Hogoboom, Ripon, Wis. Trade-mark (Design)	Mar. 15, 1870
106,614	Peart, Sylvanus E., McKeesport, Pa. Lubricator for loose wheels	Aug. 23, 1870
102,703	Pease, Hart F., Brooklyn, N. Y. Piston connections	May 3, 1870
110,279	Pease, Henry, assignor to self and Henry W. Seymour, Brockport, N. Y. Harvester-rake	Dec. 20, 1870
99,468	Pease, Henry A., Hartford, Conn. Manufacture of soap. (Antedated Jan. 21, 1870)	Feb. 1, 1870
107,954	Pease, Horatio Nelson, Toledo, Ohio. Cultivator	Oct. 4, 1870
106,615	Pease, John Ives, Stockbridge, Mass. Railway-car seat	Aug. 23, 1870
104,059	Pease, Oscar S., Xenia, Ohio. Fare-recorder for cars, &c.	June 7, 1870
98,621	Pease, O. S., and L. E. Skinner, Cincinnati, Ohio. Railway-car brake. (Antedated Dec. 24, 1869)	Jan. 4, 1870
	Pease, Oscar S., and William M. Russell. (See Russell & Pease.)	
106,400	Peavey, Andrew J., assignor of three-fourths interest to George F. Pottle, Boston, Mass. Governor for steam-engines	Aug. 16, 1870
103,494	Peavey, Charles A., Joliet, Ill. Feed-water connecting-pipe for locomotives	May 24, 1870
110,280	Peck, Charles, assignor to self and Milo Peck, New Haven, Conn. Rock-drill	Dec. 20, 1870
102,427	Peck, Deon E., Burlington, Conn. Elastic door-guard	April 26, 1870
	Peck, Edward D. (See Parmelee, H., assignor.)	
	Peck, Edwin J., et al. (See Farr, Henry L., assignor.)	
	Peck, G. S., et al. (See Clark, L. S., assignor.)	
98,998	Peck, James I., Deansville, N. Y. Tongue and thill-coupling	Jan. 18, 1870
	Peck, Joseph. (See Blakeslee, Charles W., assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,445	Peck, J. Franklin, Springfield, Mass. Spring bed-bottom.....	Nov. 22, 1870
106,957	Peck, Lowell L., Portland, Oreg. Washing-machine.....	Aug. 30, 1870
	Peck, Samuel & Co. (See Jerome, Samuel B., assignor.) (Four cases.) (Design.)	
100,061	Peck, Walter, Rockford, Ill. Wind-mill.....	Feb. 22, 1870
102,588	Same.....Grinding-mill.....	May 3, 1870
106,502	Peckham, Merritt, Utica, N. Y. Fire-grate.....	Aug. 16, 1870
106,503	Same.....Base-burning stove.....	Aug. 16, 1870
102,704	Peek, George H., East Hamburg, N. Y. Smiths' bellows.....	May 3, 1870
109,543	Same.....Corn-planter.....	Nov. 22, 1870
	Peekham, Charles H., <i>et al.</i> (See Spicer, Peekham & Spicer.)	
104,993	Peet, Rolla A., Caledonia Township, Mich. Hay and manure fork.....	July 5, 1870
99,943	Peet, S. J., New York, N. Y. Stop-valve for steam and other engineering.....	Feb. 15, 1870
99,944	Same.....same.....	Feb. 15, 1870
100,318	Same.....Apparatus for making solid cores. (Antedated Feb. 16, 1870).....	Mar. 1, 1870
100,319	Same.....Machine for producing molds. (Antedated Feb. 16, 1870).....	Mar. 1, 1870
100,320	Same.....Machine for producing cores. (Antedated Feb. 16, 1870).....	Mar. 1, 1870
101,033	Peet, Samuel Joseph, and Daniel Sawyer, assignors to Samuel Joseph Peet, Boston, Mass. Machine for forming molds.....	Mar. 22, 1870
107,531	Peirce, Thomas W., Minneapolis, Minn. Hay fork and hook.....	Sept. 20, 1870
	Peirce, William H., <i>et al.</i> (See Lichtenstein, Joseph, assignor.)	
98,624	Pelisse, Augustus, assignor of one-fourth interest to Warner A. Childs, Newark, N. J. Machine for stretching hats.....	Jan. 4, 1870
99,700	Pelisse, A., and Francis Degen, Newark, N. J. Hat-sizing machine.....	Feb. 8, 1870
108,621	Peloubet, David A., assignor to Warren Spadone & Co., Hudson City, N. J. Chain-link and bar.....	Oct. 25, 1870
105,594	Pemberton, Henry, Allegheny City, Pa. Manufacture of paper.....	July 19, 1870
108,177	Same.....same.....	Oct. 11, 1870
100,439	Pemberton, John S., Atlanta, Ga. Medical compound from globe-flower.....	Mar. 1, 1870
102,035	Pemberton, Thomas and George A., England. Alarm and other bells. (Patented in England May 4, 1868).....	April 19, 1870
107,287	Pence, John W., Clayton, Ohio. Earth-pulverizer.....	Sept. 13, 1870
103,048	Pence, Oliver P., Des Moines, Iowa. Fruit-drier.....	Oct. 4, 1870
107,955	Pencille, Jethro, assignor to self and Cornelius Hood, Lockport, N. Y. Friction-roller for railway-car trucks.....	Oct. 4, 1870
	Pendleton, John M. (See Loew, Oscar, assignor).....(Three cases.)	
102,963	Pendleton, William, and Henry M. Boardman, Augusta, Ga. Cotton-press.....	May 10, 1870
102,311	Penfield, Charles R., Lockport, N. Y. Flower-pot.....	April 26, 1870
	Penfield, Henry S., and Eben B. Fenton. (See Fenton & Penfield.)	
98,519	Penfield, James W., Willoughby, Ohio. Tile-machine.....	Jan. 4, 1870
3,905	Same.....Cleveland, Ohio. Tile-machine.....(Reissue).....	April 5, 1870
104,577	Penicks, Thomas B., Philadelphia, Pa., and Joseph Heffly, Washington, D. C. Umbrella.....	June 28, 1870
108,820	Penney, Joseph, Rochester, N. Y. Machine for dressing hoops.....	Nov. 1, 1870
99,469	Pennington, Isaac, Tiffin, Ohio. Grain-fan.....	Feb. 1, 1870
	Pennington, Josias, jr. (See Sneider, Charles Edward, assignor.)	
102,312	Pennock, Abraham Liddon, Philadelphia, Pa. Radiating or boiler plate.....	April 26, 1870
103,363	Same.....Steam-generator.....	May 24, 1870
106,867	Same.....Upper Darby, Pa. Operating-valves.....	Aug. 30, 1870
107,715	Same.....Furnace-grate.....	Sept. 27, 1870
103,364	Pennock, W. H., assignor to self and W. H. Greenwalt, Mermaid, Del. Churn. (Antedated April 23, 1870).....	May 24, 1870
99,229	Pennoyer, Dorwin Dorman, assignor to self and Albert Harvey Brooks, Colebrook, N. H. Paint or coating for roofs.....	Jan. 25, 1870
103,495	Pennoyer, George, New York, N. Y. Harness saddle-tree.....	May 24, 1870
	Pentlarge, Rafael, and David Lichtenstadt. (See Lichtenstadt & Pentlarge.)	
107,956	Peoble, Frederick G., New York, N. Y. Curtain-fixture.....	Oct. 4, 1870
99,945	Peple, Anthony, East Billerica, Mass. Preparing certain kinds of cotton-waste for cleaning machinery.....	Feb. 15, 1870
101,158	Same.....Mode of attaching cornices to windows.....	Mar. 22, 1870
4,077	Same.....same.....(Reissue).....	July 19, 1870
108,821	Same.....Billerica, Mass. Preparing cotton-waste for cleaning machinery.....	Nov. 1, 1870
109,046	Pepler, James, England. Machine for dressing mill-stones. (Antedated Oct. 29, 1870).....	Nov. 8, 1870
102,428	Pepper, Daniel Webster, assignor to William Jenks Fell and Joseph E. Taylor, Philadelphia, Pa. Dredging-can.....	April 26, 1870
3,901	Pepper, John, assignor through mesne assignments to the Pepper Knitting-Machine Company, Boston, Mass. Knitting-machine.....(Reissue).....	Mar. 29, 1870
102,313	Pepper, John, assignor to Ipswich Mills, Lake Village, N. H. Knitting-machine.....	April 26, 1870
105,123	Pepper, Truman W., New York, N. Y. Sewing-machine.....	July 5, 1870
110,281	Peppler, Thomas, Hightstown, N. J. Gang-plow.....	Dec. 20, 1870
103,920	Percival, Joshua J., Speedwell, Va. Fire-tongs.....	June 7, 1870
107,532	Percival, Lionel V., and Joseph Link; said Percival assignor to said Link, U. S. Army. Animal-trap.....	Sept. 20, 1870
99,470	Perham, Aurestus S., assignor to self, Alonzo Bell, and Amos Hadley, Washington, D. C. Compound tool.....	Feb. 1, 1870
101,034	Perin, A., France. Saw-mill.....	Mar. 22, 1870
101,501	Perkes, Charles, Philadelphia, Pa. Sealing-apparatus for pipe-joint couplings.....	April 5, 1870
109,047	Perkins, Charles H., assignor to Perkins Sheet-Iron Company, Providence, R. I. Pitman.....	Nov. 8, 1870
	Perkins, D. W. (See Selleck, W. L., assignor.)	
106,401	Perkins, Eliab, Fond du Lac, Wis. Refrigerator.....	Aug. 16, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,201	Perkins, E. Lamson, Joseph H. Moulton, and Charles E. Sawyer, Boston, Mass. Steam-trap .....	Aug. 9, 1870
109,446	Perkins, George C., Hartford, Conn. Woven-wire mattress .....	Nov. 22, 1870
	Same..... (See Locher, Conrad, assignor.) .....	
100,186	Perkins, George H., Brooklyn, N. Y. Cap for metallic cans .....	Feb. 22, 1870
104,193	Same..... Metallic cap for tin cans .....	June 14, 1870
	Perkins, George H., and Joseph Lecomte. (See Lecomte & Perkins.) .....	
105,244	Perkins, Harford J., assignor to George S. Snyder, Williamsport, Pa. Machine for sharpening the teeth of saws. (Antedated July 1, 1870) .....	July 12, 1870
103,771	Perkins, Henry L., Kinsman, Ohio. Hay-spreader .....	May 31, 1870
104,344	Perkins, Howard, assignor to self, Thomas B. Grover, and John B. Hartwell, Mansfield, Mass. Sash-fastener .....	June 14, 1870
102,314	Perkins, R. W., assignor to W. H. Hayward, Colchester, Conn. Ventilated rubber-boot .....	April 26, 1870
	Perkins, Stanhope, <i>et al.</i> (See Sacre, Perkins & Smellie.) .....	
108,727	Perkins, William M., and Theodore F. Vandergift, La Fountain, Ind. Draught-equalizer .....	Oct. 25, 1870
	Perkins, William Wallace, <i>et al.</i> (See Reiley, John O., assignor.) .....	
102,964	Perrault, Joseph, Troy, N. Y. Pressure-blower .....	May 10, 1870
100,321	Perrault, L. A., Natchez, Miss. Bottle-cock .....	Mar. 1, 1870
103,921	Perrine, Alfred T., Louisville, Ky. Metallic boot and shoe heel .....	June 7, 1870
100,440	Perrine, Alfred T., assignor to self and William C. Chase, Louisville, Ky. Auger for boring square holes .....	Mar. 1, 1870
109,657	Perrot, Louis, Greenville, Wis., and Frank Perrot and Charles H. Bates, Appleton, Wis. Combined-garden-tool .....	Nov. 29, 1870
	Perry, Charles, and Thomas Watson. (See Watson & Perry.) .....	
103,922	Perry, Chauncey, Rochester, N. Y. Grain-cleaner. (Antedated May 23, 1870) .....	June 7, 1870
100,441	Perry, Chauncey, and James E. Wheat, Rochester, N. Y. Grain-cleaner. (Antedated Feb. 26, 1870) .....	Mar. 1, 1870
99,701	Perry, Dan, North Providence, R. I. Knife-guard .....	Feb. 8, 1870
109,244	Perry, Daniel W., Wilkesbarre, Pa. Cutter-head .....	Nov. 15, 1870
4,148	Perry, Edward and Richard, <i>et al.</i> (See Wood, Enoch, assignor.) .....	
	Perry, Edward L., and Charles Manheim, assignors to the Combination Rubber Company, and the Gutta-Percha and Rubber Manufacturing Company, New York, N. Y. Manufacture of rubber or gutta-percha hose .....	Oct. 4, 1870
	(Reissue) .....	
	Perry, Franklin Waldo. (See White, Zebard Thompson, assignor.) .....	
105,975	Perry, Frederick M., Barton, Vt. Cut-off for relays and other electro-magnetic instruments .....	Aug. 2, 1870
102,150	Perry, George, Granville, Ill. Double-shovel plow .....	April 19, 1870
4,008	Perry, John G., Kingston, R. I. Harvester .....	May 31, 1870
104,489	Same..... same .....	June 21, 1870
104,490	Same..... same .....	June 21, 1870
	Perry, John S., trustee and executor, <i>et al.</i> (See Dickey, Andrew, assignor.) .....	
100,322	Perry, John S., and Andrew Dickey, Albany, N. Y. Base-burning stove .....	Mar. 1, 1870
104,060	Perry, Joseph R., Wilkesbarre, Pa. Organ-bellows .....	June 7, 1870
106,275	Same..... same .....	Aug. 9, 1870
104,762	Perry, Joseph R., Daniel W., and James, Wilkesbarre, Pa. Street-railway car-truck .....	June 28, 1870
	Perry, Nathan B., <i>et al.</i> (See Dickey, Andrew, assignor.) .....	
106,720	Perry, Noah C., Chester, Conn. Machine for bending wire screw-eyes .....	Aug. 23, 1870
101,502	Perry, Oliver H., Golconda, Ill. Wood-turning lathe .....	April 5, 1870
102,429	Perry, S. M., Plainfield, N. J., and E. Goddard, Brooklyn, N. Y., assignors to E. S. Renwick. Breech-loading pistol .....	April 26, 1870
	Perry, Samuel W., <i>et al.</i> (See Hawks, Elizabeth, assignor) .....	(Disclaimer.)
	Perry, William, and John J. Mills. (See Mills & Perry.) .....	
3,787	Perry, William H., Sharon, Pa. Manufacture of bar-iron .....	Jan. 4, 1870
99,588	Same..... Manufacture of iron and granulating the same .....	Feb. 8, 1870
108,178	Peter, Lewis A., Neffs, Pa. Horse-power .....	Oct. 11, 1870
102,315	Peters, George M., Columbus, Ohio. Adjustable metallic dasher for vehicles .....	April 26, 1870
104,061	Peters, Henry, Davenport, Iowa. Tool for cutting off bolts, rods, &c. ....	June 7, 1870
108,622	Peters, J., William C., and William A. Le Row, Chicago, Ill. Bed and bed-bottom. Peters, Norris. (See Rehn, Isaac, assignor.) .....	Oct. 25, 1870
102,858	Peters, Samuel, Crescent, N. Y. Lantern .....	May 10, 1870
	Peters, Simeon, P. (See Cargar, Tyrus M., assignor.) .....	
	Petersen, Theodor, <i>et al.</i> (See Wicke, Bronner, Peterson & Zehfuss.) .....	
106,721	Peterson, Alfred, Stockwell, Ind. Mole-ditching machine .....	Aug. 23, 1870
108,049	Peterson, Christian, Red Wing, Minn. Fanning-mill .....	Oct. 4, 1870
	Peterson, Julius, and Joseph Wood Tuttle. (See Tuttle & Peterson.) .....	
107,096	Peterson, Peter, Abingdon, Ill. Bolt-fastening .....	Sept. 6, 1870
	Peterson, Richard, and David Stuart. (See Stuart & Bridge, assignors). (Design.) .....	
	Same..... same .....	(Two cases.)
	Peterson, Richard, <i>et al.</i> (See Bridge, Lewis, assignor.) .....	
101,035	Peterson, Thomas F., New Orleans, La. Apparatus for purifying water for the manufacture of ice .....	Mar. 22, 1870
	Peterson, Thomas K., <i>et al.</i> (See Horter, George, assignor) .....	(Two cases.)
107,194	Petin, Hippolyte Ulysse, France. Machine for rolling tires .....	Sept. 6, 1870
99,344	Petre, N., New York, N. Y. Lock .....	Feb. 1, 1870
104,194	Petrie, Walter R., Westville, Conn. Manufacturing carriage-spring heads .....	June 14, 1870
108,623	Pettce, Simon E., and Clarence A. Wollé, Bethlehem, Pa. Paper-file .....	Oct. 25, 1870
100,796	Pettce, William W., Foxborough, Mass. Presser-foot for sewing-machines .....	Mar. 15, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,772	Pettengill, Manasseh, assignor to self and Solon Jonson, Le Roy, Minn. Metal tip for boots and shoes.	May 31, 1870
110,494	Pettes, Moses M., Worcester, Mass. Countersink.	Dec. 27, 1870
100,187	Petteys, Eli, Chestertown, N. Y. Wagon.	Feb. 22, 1870
107,288	Pettibone, Chauncey V., Fond du Lac, Wis. Thread-spool.	Sept. 13, 1870
109,447	Same. Wheel for vehicles.	Nov. 22, 1870
102,705	Pettibone, Rush J., and Benjamin Garvin. (See Garvin & Pettibone.) Pettingell, William, and Ashbel G. Smith. (See Smith & Pettingell.) Pough, Spencer B., Salem, Ind. Washing-machine. Pevey, Abiel, and John Currier. (See Currier & Pevey.) Pevey, James A. (See Smith, Luther, assignor.)	May 3, 1870
104,878	Pfaff, Adolph, Baltimore, Md. Machine for cutting fat, &c.	June 28, 1870
102,036	Pfau, John L., jr., Quincy, Ill. Attachment for heating stoves.	April 19, 1870
103,237	Pfau, Julius P., Lansingburgh, N. Y. Railway-station indicator.	May 17, 1870
98,999	Pfeifer, Rupert, assignor to self and Jacob Nanerth, Austria. Corn-sheller.	Jan. 18, 1870
103,179	Pfeil, John C., Arenzville, Ill. Three-horse equalizer.	Oct. 11, 1870
98,795	Pfleghar, F. P., assignor to self and McLagou & Stevens, New Haven, Conn. Knob-latch.	Jan. 11, 1870
100,661	Same. Combined latch and lock.	Mar. 8, 1870
103,773	Pflegher, Solomon, assignor to self and James Shoemaker Pflegher, Reading, Pa. Valve-cock for hydrants.	May 31, 1870
102,965	Phares, P., et al. (See Campbell, James A., assignor.) Phelan, William, Peoria, Ill. Condenser and feed-water heater.	May 10, 1870
108,386	Phelen, Dennis, et al. (See Curry, John Mayrs, assignor.) Phelps, Augustus H., assignor to Phineas E. Saunders, Mary E. Phelps, and Joseph Cook, Trenton, Mich. Refrigerator.	Oct. 18, 1870
110,068	Phelps, Chamberlayne, Clayton, N. Y. Elastic mane-turner.	Dec. 13, 1870
109,448	Phelps, Chamberlayne, Clayton, N. Y., and Aaron K. Tuttle, Cape Vincent, N. Y. Atmospheric leaf-turner.	Nov. 22, 1870
104,639	Phelps, D. D., et al. (See Ballantine, Alexander T., assignor.)	
4,152	Phelps, Ebenezer W., Elizabeth, N. J. Saw gumming and sharpening machine.	June 21, 1870
103,624	Phelps, George M., Brooklyn, N. Y. Printing-telegraph. (Reissue.)	Oct. 11, 1870
99,589	Phelps, Park & Co. (See Wilson, James S., assignor.)	
100,797	Phelps, Samuel W., Sandusky, Ohio. Machine for driving nails.	Oct. 25, 1870
103,365	Phelps, William E., Elmwood, Ill. Hay-gatherer.	Feb. 8, 1870
105,976	Same. Ventilator.	Mar. 15, 1870
107,716	Same. Boot-blackening attachment to bureaus.	May 24, 1870
108,625	Same. Sash-holder.	Aug. 2, 1870
98,882	Same. Car-ventilator and refrigerator.	Sept. 27, 1870
103,496	Phelps, William F., Winona, Minn. Map-stand. (Antedated Oct. 13, 1870.)	Oct. 25, 1870
104,345	Phelps, William M., and Samuel J. Burpee, Marshall, Mich. Heating-stove.	Jan. 18, 1870
104,346	Phelps, William P., Brooklyn, N. Y., and William J. Philips, Philadelphia, Pa., assignors to William J. Philips. Printing-telegraph instrument.	May 24, 1870
100,798	Same. Printing-telegraph instrument.	June 14, 1870
98,706	Philadelphia Patent and Novelty Company. (See Goodes, E. A., assignor). (Two cases.)	
106,276	Philip, David C., Philmont, N. Y., and Clark and Ira Tompkins, Troy, N. Y., assignors to Clark Tompkins. Knitting-machine.	June 14, 1870
106,277	Philip, Frank, assignor to Hamilton E. Towle and George Ed. Harding, Stockport, N. Y. Knitting-machine.	Mar. 15, 1870
98,883	Philip, Peter and Franklin, Stockport, N. Y. Machine for making wire-heddles.	Jan. 11, 1870
107,533	Philip, Peter, Stockport, N. Y. Machine for husking corn.	Aug. 9, 1870
98,625	Same. Heddle-machine.	Aug. 9, 1870
109,934	Phillips, Joseph, Germany. Mode of producing light by means of solid and liquid hydrocarbons.	Jan. 18, 1870
105,245	Phillips, Lester, Eau Claire, Wis. Fence.	Sept. 20, 1870
101,159	Phillips, William J., and William P. Phelps. (See Phelps & Phillips). (Two cases.)	
4,063	Phillips, David, assignor to Daniel M. Zook and Herman Klingman, Oil City, Pa. Tongs for lifting and adjusting well-tubing. (Antedated Dec. 18, 1869.)	Jan. 4, 1870
4,219	Phillips, Elwood, Centerville, Ind. Corn-plow.	Dec. 6, 1870
107,808	Phillips, Ephraim. (See Low, Isaac, assignor.)	
103,342	Phillips, Ezekiel, Blackstone, Mass. Sad-iron heater.	July 12, 1870
106,662	Phillips, George H., Troy, N. Y. Cooking-stove. (Antedated Feb. 14, 1870.)	Mar. 22, 1870
106,868	Same. same. (Reissue.)	July 5, 1870
108,180	Same. Reservoir cooking-stove. (Reissue.)	Dec. 27, 1870
104,347	Phillips, John, Chicago, Ill. Saw.	Sept. 27, 1870
108,511	Phillips, Nicholas E., et al. (See Swickard, Noah, assignor). (Reissue.)	
102,966	Phillips, N. M. (See Marston, T. P., assignor.)	
103,342	Phillips, Robert V., Council Bluffs, Iowa. Door-catch.	Nov. 15, 1870
106,662	Phillips, Russell, Boston, Mass. Clothes-drier.	Mar. 8, 1870
106,868	Same. Carpenters' plane.	Aug. 30, 1870
108,180	Phillips, Thomas, Cadiz, Ohio. Fire-place.	Oct. 11, 1870
103,658	Phillips, Thomas, and Alexander Van Vleck. (See Van Vleck & Phillips.) Phillips, Thomas D., and Lyman Bradley. (See Bradley & Phillips.) Phillips, Thomas D., Cassadaga, N. Y., and Thomas S., assignors to Benoni S. Brown and Thomas S. Phillips, Buffalo, N. Y. Enameled cast-iron retort.	Nov. 29, 1870
104,347	Phillips, Wilam J., and Charles J. Linberg. (See Linberg & Phillips.)	
108,511	Phillips, William L., Normal, Ill. Malt-drier.	June 14, 1870
102,966	Phillips, Zelora, Osseo, Mich. Brick-machine.	Oct. 18, 1870
	Phillips, Zephaniah, Dixon, Ill. Carpenters' plane.	May 10, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,763	Philp, John Wesley, Humboldt, Tenn. Cultivator .....	June 28, 1870
102,967	Phinney, Hugh M., Cambridge, Mass. Ventilator-register .....	May 10, 1870
106,869	Phinney, William H., Pawtucket, R. I. Scale for showing weight and price.....	Aug. 30, 1870
	Phipps, D. Goffe, <i>et al.</i> (See Camp, M. M., assignor.)	
104,348	Phipps, D. Goffe, assignor to self, Mortimer M. Camp, and Ellsworth I. Foote, New Haven, Conn. Joint for cement-pipes .....	June 14, 1870
103,649	Phleger, Leonard, Philadelphia, Pa. Steam-engine connection. (Antedated May 19, 1870) .....	May 31, 1870
110,157	Pickard, Ira, assignor to self and James W. Slaght, Lena, Ill. Coal-grate.....	Dec. 13, 1870
106,402	Pickens, Andrew F., New York, N. Y. Box for blueing, &c.....	Aug. 16, 1870
102,968	Pickens, William, and Peter Dalrymple, Chicago, Ill. Machine for dressing mill-stones .....	May 10, 1870
102,589	Pickerill, Frank M., Indianapolis, Ind. Automatic wagon-brake .....	May 3, 1870
99,230	Pickerill, Samuel J. and Francis M., Indianapolis, Ind. Automatic wagon-brake .....	Jan. 25, 1870
103,497	Pickering, Charles H., Memphis, Tenn. Hand corn-sheller .....	May 24, 1870
	Pickering, Charles Williams, and William Rhoda Nichols. (See Nichols & Pickering.)	
99,231	Pickering, Jonathan, England. Apparatus for raising and lowering weights....	Jan. 25, 1870
102,316	Pickett, Benjamin F., Nashville, Tenn. Railway-car roof .....	April 26, 1870
4,191	Pickford, Henry, assignor to Harshaw Scott, New York, N. Y. Skate-fastening .....	Nov. 29, 1870
	(Reissue) .....	
102,317	Piehl, John F., Richmond, Ind. School-desk .....	April 26, 1870
106,403	Same .....	Aug. 16, 1870
99,946	Pierce, Charles E., New York, N. Y. Combined harrow, roller, and seed-sower .....	Feb. 15, 1870
104,195	Same .....	June 14, 1870
99,345	Pierce, D. C., Chicago, Ill. Railway-chair and fish-joint. (Antedated Jan. 24, 1870) .....	Feb. 1, 1870
99,346	Same .....	Feb. 1, 1870
102,430	Pierce, Edwin A., New York, N. Y. Portable shoe-brush and box .....	April 26, 1870
3,940	Pierce, Elijah S., assignor to the National Screw Company, Hartford, Conn. Tool for cutting screw-threads..... (Division A, reissue) ..	April 26, 1870
3,941	Same .....	April 26, 1870
	(Division B, reissue) ..	
	Pierce, Isaac. (See Hall, James T., assignor.)	
109,838	Pierce, James D., and John B. Smith, Milwaukee, Wis. Stove-pipe thimble.....	Dec. 6, 1870
	Pierce, J. D. (See Sanders, David, assignor.)	
103,923	Pierce, Jonas J., Sharpsville, Pa. Hot-blast apparatus .....	June 7, 1870
100,663	Pierce, Levi, Charlestown, Mass. Mode of suspending mirrors to furniture ..	Mar. 8, 1870
104,196	Pierce, M. K., Calaban's Ranch, Cal. Sheet-metal pipe forming and threading machine .....	June 14, 1870
100,664	Pierce, Willard, Truxton, N. J. Ditching-machine .....	Mar. 8, 1870
	Pierce, William H. (See Sabins, Philander G., assignor.)	
	Pierce, William H., and Augustus Guild. (See Guild & Pierce.)	
	Pierce, Wyatt W., <i>et al.</i> (See Ross, Robert, assignor.)	
99,702	Pierpont, Joshua, assignor to self and Sidney S. Tuttle, La Harpe, Ill. Device for securing shovels and plowshares to standards .....	Feb. 8, 1870
	Pierpont, Joshua, and Sidney S. Tuttle, La Harpe, Ill. Fastening for shovels for cultivators and plows .....	Oct. 18, 1870
	Pierson, Edward M., assignor to Edwin D. McCracken, Newark, N. J. Switch for galvanic batteries .....	Oct. 18, 1870
	Pierson, Peter. (See Blakesley, Ezra, assignor.)	
99,107	Pike, Charles F., Providence, R. I. Cooling-apparatus .....	Jan. 25, 1870
99,471	Pike, Charles F., assignor to Henry C. Mahuin and Charles Smead, Providence, R. I. Railway cattle-car .....	Feb. 1, 1870
108,387	Pike, William G., Philadelphia, Pa. Machine for making rope .....	Oct. 18, 1870
107,405	Pilkington, James E., Baltimore, Md. Ice-preserver .....	Sept. 13, 1870
110,391	Pilling, Robert, Waterford, N. Y. Stop-valve .....	Dec. 20, 1870
98,796	Pilote, Theophile, Marlborough, Mass. Shoemakers' pincers .....	Jan. 11, 1870
	Pim, William, and Augustus Newell. (See Newell & Pim.)	
99,108	Pimlott, William, Springfield, Ohio. Harvester-rake .....	Jan. 25, 1870
109,449	Same .....	Nov. 23, 1870
100,062	Pine, Benjamin, New York, N. Y. Washing-machine .....	Feb. 22, 1870
	Pine, Benjamin F., <i>et al.</i> (See Millinger, James, assignor.)	
	Same .....	(Reissue.)
100,063	Pingar, David, St. Joseph, Mo. Tank for rendering lard .....	Feb. 23, 1870
104,994	Pingree, Luther F., Portland, Me. Artificial leg .....	July 5, 1870
102,431	Pinkham, George F., Cambridge, Mass. Fire-extinguisher. (Antedated Nov. 2, 1869) .....	April 26, 1870
106,616	Pinkney, Robert, England. Preparation of colors for dyes, inks, &c., from aniline .....	Aug. 23, 1870
	Pinney, Gaylord P., and Henry F. Harris. (See Harris & Pinney.)	
104,640	Pinover, Simon, assignor to Kaufmann Brothers, New York, N. Y. Watch-chain lock .....	June 21, 1870
	Pintard, H. A., and Jane Quantin, administrators. (See Quantin, Alphonse). (Extension.)	
102,859	Piper, Howard, Haskins, Ohio. Farm-gate .....	May 10, 1870
105,365	Piper, James M., Harrison City, Pa. Corn-planter .....	July 12, 1870
105,977	Piret, Jean B. G. M. F., France. Lubricating-apparatus for axle and journal-boxes .....	Aug. 2, 1870
105,721	Pitcher, Gurdon W., Brooklyn, N. Y. Tablet-locket for photographs, &c.....	July 26, 1870
110,069	Pitcher, Hiram, assignor to self, H. and G. O. Trowbridge, Fond du Lac, Wis. Chain-clutch. (Antedated Dec. 9, 1870) .....	Dec. 13, 1870
105,839	Pitcher, Leman B., Salina, N. Y. Cylinder for mixing fertilizers .....	July 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,840	Pitcher, Leman B., Salina, N. Y. Mortar-mill.....	July 26, 1870
106,282	Same.....Preparation of lime and mortar.....	Aug. 9, 1870
107,534	Same.....Manner of mounting hollow revolving cylinders.....	Sept. 20, 1870
107,535	Same.....Process and machinery for making mortar.....	Sept. 20, 1870
108,822	Pitkin, J. H., and William D. Alford. (See Alford & Pitkin.) Pitkin, Julian H., and Julius S. Lane, Akron, Ohio. Machine for grinding and polishing metals.....	Nov. 1, 1870
104,641	Pitman, William, New York, N. Y. Combined pump and siphon.....	June 21, 1870
106,202	Pittman, George W., Winona, Miss. Corn-planter.....	Aug. 9, 1870
4,451	Pitts, Joseph and James K., McLean, Ill. Coal-hod..... (Design)..	Nov. 1, 1870
106,404	Pitts, Phillip H., Waverly, Mo. Lathe.....	Aug. 16, 1870
105,841	Place, William H., New York, N. Y. Steam-engine governor.....	July 26, 1870
106,958	Place, William S., Charleston, Me. Water-wheel.....	Aug. 30, 1870
106,722	Plage, Charles, assignor to self and Theodore C. Glazier, New York, N. Y. Ice- machine.....	Aug. 23, 1870
106,283	Plamondon, Peter, Atchison, Kans. Mill-stone bearing.....	Aug. 9, 1870
105,595	Plant, Ebenezer H., Plantsville, Conn. Die for trimming and straightening axle-clips.....	July 19, 1870
106,278	Plant, John, Washington, D. C. Hinge.....	Aug. 9, 1870
107,195	Plass, John T., New York, N. Y. Sawing-machine.....	Sept. 6, 1870
104,642	Plass, Reuben H., New York, N. Y. Apparatus for carbureting air. (Ante- dated June 11, 1870).....	June 21, 1870
106,723	Platt, Alfred C., Sandusky, Ohio. Can-opener.....	Aug. 23, 1870
106,724	Same.....Machine for varnishing and labeling fruit-cans and other cylin- drical packages.....	Aug. 23, 1870
106,725	Same.....Skate.....	Aug. 23, 1870
109,935	Same.....same.....	Dec. 6, 1870
100,442	Platt, A. Warner, New York, N. Y. Circuit-closer for electro-magnetic railroad- signals.....	Mar. 1, 1870
100,554	Same.....Wood pavement.....	Mar. 8, 1870
108,181	Same.....same.....	Oct. 11, 1870
107,957	Platt, Edwin, Charleston, S. C. Apparatus for washing ores and minerals.....	Oct. 4, 1870
107,958	Platt, Jacob B., Augusta, Ga. Machine for washing ores and other mineral substances.....	Oct. 4, 1870
103,650	Platts, Hervey. (See Horton, Henry B., assignor.) Player, John, deceased, by Augusta Amelia Player and Henry McAllister, jr., administrators, Philadelphia, Pa. Treating slag from iron and glass furnaces for producing a useful material.....	May 31, 1870
103,651	Same.....Hot-blast oven.....	May 31, 1870
4,149	Player, John, assignor to James Henderson and Jasper M. Lawford, England. Apparatus for heating the blast for furnaces used in smelt- ing iron, &c..... (Reissue)..	Oct. 11, 1870
4,150	Same.....Hot-blast stove for blast-furnaces, &c..... (Reissue)..	Oct. 11, 1870
3,906	Plimpton, James L., New York, N. Y. Skate..... (Reissue)..	April 5, 1870
103,291	Plodcek, Paul, Cleveland, Ohio. Manufacture of vinegar.....	Oct. 11, 1870
102,037	Plum, Louis H., Cincinnati, Ohio. Steam-trap.....	April 19, 1870
98,797	Plumb, H., assignor to self and William A. Drown, Frankford, Pa. Lock for umbrellas.....	Jan. 11, 1870
103,774	Plumb, Hiram, assignor to self and William A. Drown, jr., Philadelphia, Pa. Apparatus for playing games.....	May 31, 1870
104,879	Plumb, Luke A., Boston, Mass. Composition amalgam for filling teeth.....	June 28, 1870
106,617	Plumb, R. H., and George C. Bell. (See Mailer, Alexander, assignor.) Plumer, Eugene C. (See Richard, Jean Elie, assignor.) Plumer, Isaac L., assignor to J. S. Chase, Chelsea, Mass. Material for paste for bookbinders and others.....	Aug. 23, 1870
109,450	Plummer, John E., and Joseph P. Noyes, Binghamton, N. Y. Clutch for ma- chinery.....	Nov. 22, 1870
104,764	Plummer, Sidney, and Thomas C. Scottron. (See Scottron & Plummer.) Plummer, S. A. (See Marable, Thomas E., assignor.) Plympton, Nathaniel, Boston, Mass. Tea-pot.....	June 28, 1870
104,491	Poche, Simeon A., St. James Parish, La. Evaporating cane-juice.....	June 21, 1870
107,406	Pochet, Leon, France. Valve in steam-apparatus for dressing stone.....	Sept. 13, 1870
103,182	Pocock, Stephen, Woodstock, Canada. Window-blind.....	Oct. 11, 1870
102,969	Poey, Juan, Havana, Cuba. Manufacture of sugar.....	May 10, 1870
108,514	Same.....same.....	Oct. 18, 1870
102,151	Poffenberger, Iva, Champaign County, Ohio. Joint for pitman-heads, sickles of harvesters, &c.....	April 19, 1870
3,907	Pohl, August, Brooklyn, N. Y. Stair-rod..... (Design)..	Mar. 15, 1870
103,493	Pohlmann, Charles, Louisville, Ky. Apparatus for preserving beer.....	May 24, 1870
105,596	Pokorny, Francis G., New York, N. Y. Paint for marbleizing wood.....	July 19, 1870
107,717	Pole, Benjamin Charles, Washington, D. C. Treadle for sewing and other machines Same..... same..... (Reissue)..	Sept. 27, 1870
4,184	Same.....same.....	Nov. 22, 1870
4,317	Polhamus, John, New York, N. Y. Handle of a spoon, fork, &c.....	Aug. 30, 1870
106,284	Pollard, Thomas, assignor to J. V. and W. H. Merrick, and J. E. Cope, Philadel- phia, Pa. Hoisting-apparatus.....	Aug. 9, 1870
108,184	Pollitt, John, assignor to self and Lyman Martin, Indianapolis, Ind. Parlor- skate.....	Oct. 11, 1870
109,245	Pollock, James B., Port Richmond, N. Y. Manufacture of varnish.....	Nov. 15, 1870
	Pollock, R. Starr, and Theodore Van Tassell. (See Van Tassell & Pollock.) Polsey, A. M., and Moses G. Crane. (See Crane & Polsey.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,703	Pomeroy, Daniel, New York, N. Y., and William Pomeroy, Brooklyn, New York, N. Y. Truss	Feb. 8, 1870
109,659	Pomeroy, William, Daniel, and Julius R. (See Richardson, Haynes L., assignor.)	Nov. 29, 1870
105,842	Pomert, John N., Greenfield, Ohio. Steam-wheel	July 26, 1870
107,809	Pond, Daniel B., Woonsocket, R. I. Washing-machine	Sept. 27, 1870
98,626	Pond, Erasmus, and Goldsbury H., and Mark S. Richardson, Rutland, Vt. Manufacture of illuminating-gas. (Antedated Sept. 24, 1870)	Jan. 4, 1870
3,961	Pond, G. H., San Francisco, Cal. Rotary steam-engine	April 5, 1870
110,495	Pond, Goldsbury H., Rutland, Vt. Tobacco-pipe (Design)	Dec. 27, 1870
110,496	Same.....Cleaning wool, cotton, &c	Dec. 27, 1870
99,472	Same.....Gas retort and heating furnace	Feb. 1, 1870
104,197	Pond, Joseph F., Cleveland, Ohio. Self-feeding wood and coal cooking-stove	June 14, 1870
102,318	Same.....Device for raising and lowering gas-fixtures. (Antedated June 1, 1870)	April 26, 1870
102,319	Pond, Levi W., assignor to self and the Eau Claire Lumber Company, West Eau Claire, Wis. Saw-swage	April 26, 1870
101,503	Same.....Saw-swaging machine	April 5, 1870
107,718	Pond, Moses, & Co. (See Albce, James, assignor.)	Sept. 27, 1870
103,366	Pond, Robert James, assignor to Jahne, Smith & Co., Morrisania, N. Y. Adjusting-slide for chains	July 12, 1870
103,366	Pond, Zimri. (See Orton, M. S., assignor.)	May 24, 1870
109,451	Ponsonby, Thomas T., England. Machine for ornamenting the surface of wood, &c.	Nov. 22, 1870
99,000	Pool, John, Elizabeth City, N. C. Farm-gate	Jan. 18, 1870
104,492	Pool, William R., Havana, Ala. Dough-worker	June 21, 1870
103,823	Poole, Frederick C., and Harry Howe, Boston, Mass. Skate-fastening	Nov. 1, 1870
100,799	Poole, John H., et al. (See Wicks, Loren J., assignor.) (Design)	Mar. 15, 1870
103,077	Poole, J. Morton, assignor to self, William T. Porter, and Thomas S. Poole, Wilmington, Del. Machine for grinding objects cylindrically	May 17, 1870
102,320	Same.....Machine for grinding rollers	April 26, 1870
103,924	Poole, Robert, New Providence, Tenn. Store-shelving	June 7, 1870
101,160	Poor, George Edwin, Charlestown, Mass. Writing-slate	Mar. 22, 1870
102,860	Pope, Frank L., Elizabeth, N. J. Electro-magnetic movement	May 10, 1870
105,843	Pope, Frank L., Elizabeth, N. J., and Thomas A. Edison, New York, N. Y. Printing-telegraph apparatus	July 26, 1870
101,764	Same.....Printing-telegraph instrument	April 12, 1870
98,884	Pope, Sampson, Covington County, Ky. Earth-auger	Jan. 18, 1870
99,704	Pope, Samuel W., Louisville, Ky. Plow	Feb. 8, 1870
100,800	Same.....same	Mar. 15, 1870
103,499	Pope, William, and William Franz. (See Franz & Pope) (Four cases.)	May 24, 1870
4,445	Poppendieck, William C., New York, N. Y. Easy-chair	Oct. 25, 1870
102,432	Poppy, John H. (See Smith, John C., assignor.)	April 26, 1870
105,722	Porcher, Francis Peyre, Charleston, S. C. Material for tanning, dyeing, and for other purposes	July 26, 1870
109,936	Port, George W., and William Funk. (See Funk & Port.)	Dec. 6, 1870
103,925	Porter, Alonzo, assignor to self, Elisha G. Marshall, and Sarah R. Young, Rochester, N. Y. Sewing-machine	June 7, 1870
103,926	Porter, A. E., and A. L., Lamolille, Ill. Riding-attachment for plows	June 7, 1870
104,995	Porter, Benjamin, Ossian, N. Y. Corn-planter	July 5, 1870
101,911	Porter, Frederick W., Springfield, Mass. Toy-carriage (Design)	April 12, 1870
99,347	Porter, Henry G., Grand Rapids, Mich. Barrel	Feb. 1, 1870
109,246	Porter, Same.....Horse hay-fork	Nov. 15, 1870
109,937	Porter, Same.....Hopkinton, Iowa. Corn-planter	Dec. 6, 1870
105,978	Porter, Henry K., Boston, Mass. Saw-set	Aug. 2, 1870
106,405	Porter, Same.....Calipers	Aug. 16, 1870
107,097	Porter, Same.....Lathe-center	Sept. 6, 1870
102,152	Porter, John G., New York, N. Y. Base-burning hot-air furnace	April 19, 1870
107,810	Porter, Mary G., Charlestown, Mass. Ladies' safety-belt	Sept. 27, 1870
109,660	Porter, Oliver, Waterford, Me. Roofing-cement	Nov. 29, 1870
107,546	Porter, Robert, Ottumwa, Iowa. Halter	Sept. 20, 1870
108,292	Porter, Samuel M., New York, N. Y. Eyelet for fastening buttons	Oct. 11, 1870
107,407	Porter, Samuel W., Springfield, Mass. Ramrod-stop	Sept. 13, 1870
107,098	Porter, T. W. and H. K., assignors to selves and Charles L. Marston, Boston, Mass. Method of inlaying wood	Sept. 6, 1870
100,443	Porter, William, Brooklyn, N. Y. Hulling-machine	Sept. 6, 1870
108,515	Porter, William, St. Stephen, Canada. Manufacture of friction-match cigar-lighter	Sept. 27, 1870
108,626	Same.....Match for cigar-lighters	Nov. 29, 1870
109,938	Porter, William H., Brazil, Ind. Wagon-bed	Sept. 20, 1870
107,546	Porter, William J., New York, N. Y., and William Cross, Jersey City, N. J., assignors to Edward H. Faulkner. Loom	Oct. 11, 1870
108,292	Porter, William T., et al. (See Poole, J. Morton, assignor.) (Two cases.)	Oct. 11, 1870
107,407	Portong, L., and W. Stachlen. (See Chvatal, H., assignor.)	Oct. 11, 1870
107,098	Positive-Motion Loom Company. (See Whitehill, Robert, assignor.)	Oct. 11, 1870
100,443	Post, Charles C., Hinesburgh, Vt. Sap-bucket	Sept. 13, 1870
108,515	Post, Elting, Boston, Mass. Steam-engine	Sept. 6, 1870
108,626	Post, Gabriel S. (See Beugler, Edwin F., assignor.)	Sept. 6, 1870
109,938	Post, Henry A. V., assignor to self, James H. Sheldon, and James T. Sterling, Cincinnati, Ohio. Steam-generator	Mar. 1, 1870
108,515	Post, John L., Ashley, Ill. Back-lash for mill-gearing	Oct. 18, 1870
108,626	Post, John W., Castile, Pa. Paddle-wheel. (Antedated Oct. 11, 1870)	Oct. 25, 1870
109,938	Post, Samuel, and Henry D. Martin, Ypsilanti, Mich. Washing-machine	Dec. 6, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,343	Poston, Richard J., Mainville, Ohio. Sawing-machine .....	Nov. 15, 1870
103,078	Potter, Abiather Fales, San Francisco, Cal. Breech-loading ordnance .....	May 17, 1870
107,099	Potter, Abiather Fales, Oakland, Cal. Gun-carriage. (Antedated Aug. 27, 1870).	Sept. 6, 1870
109,661	Potter, Charles A., Providence, R. I. Shutter-worker. (Antedated Nov. 19, 1870).	Nov. 29, 1870
110,070	Potter, Charles L., Providence, R. I. Device for attaching the shanks to mineral and composition buttons .....	Dec. 13, 1870
104,349	Potter, Daniel, Peoria, Ill. Hay-binder pole for wagons .....	June 14, 1870
102,590	Potter, Emily S. and Betsey R., Boston, Mass. Heating and ventilating attachment for stoves and fire-places .....	May 3, 1870
98,520	Potter, James, Portland, Me. Bed-bottom .....	Jan. 4, 1870
109,048	Potter, James O., Rouseville, Pa. Device for operating plows .....	Nov. 8, 1870
106,504	Potter, John, Quincy, Ill. Tobacco box or drum .....	Aug. 16, 1870
98,786	Potter, Joseph, assignor to self and George L. Lyon, Danielsonville, Conn. Mechanism for relieving the pressure on shuttle-box swell .....	Feb. 15, 1870
103,500	Potter, Nathaniel F., Providence, R. I. Kiln for drying and burning brick .....	May 24, 1870
104,350	Potter, Orlando B., New York, N. Y. Treadle-movement .....	June 14, 1870
100,665	Potter, Robert M., Jersey City, N. J. Union-coupling for pipes .....	Mar. 8, 1870
	Potter, Thomas, Son & Co. (See Hutchison, James, assignor) .....	(Design.)
	Same.....(See Kagy, Henry, assignor).....(Five cases.) (Design.)	(Design.)
	Same.....(See Paterson, James, assignor).....(Two cases.) (Design.)	(Design.)
	Same.....(See Webster, John T., assignor).....(Two cases.) (Design.)	(Design.)
	Potter, Thomas O., and Joseph W. Smith. (See Greeley, B. J., assignor.)	
109,939	Pottle, George F. (See Peavey, Andrew J., assignor.)	
110,497	Potts, Albert, Philadelphia, Pa. Letter-box .....	Dec. 6, 1870
104,765	Same.....Railway-car spring .....	Dec. 27, 1870
	Potts, Joseph D., Philadelphia, Pa., and Benjamin P. Lamason, Milton, Pa., assignors to Empire Transportation Company. Refrigerator railroad-car .....	June 28, 1870
101,161	Potts, Joseph H., assignor to Mary F. Potts, Ottumwa, Iowa. Spring for bed-bottoms .....	Mar. 22, 1870
103,501	Potts, Mary F., Ottumwa, Iowa. Sad-iron .....	May 24, 1870
102,661	Potts, Robert, and Nathaniel Ogden, Chatham, N. Y. Spoke for wagon-wheels.	May 10, 1870
98,627	Powell, Ambrose, New Baltimore, N. Y. Combined harrow, roller, and seeder.	Jan. 4, 1870
102,038	Powell, Charles, England. Hose-coupling .....	April 19, 1870
109,754	Powell, Edwin R., Jeffersonville, Vt. Wheel-harrow .....	Nov. 29, 1870
	Powell, Jacob C. (See Dietsch, Edward, assignor.)	
99,001	Powell, James, Cincinnati, Ohio. Compression-cock .....	Jan. 18, 1870
101,308	Powell, Michael, Umatilla, Oreg. Wagon-brake .....	Mar. 29, 1870
103,367	Powell, Thomas J., Naples, N. Y. Elevator and conveyer .....	May 24, 1870
108,183	Same.....Combined elevator and conveyer .....	Oct. 11, 1870
105,723	Powell, Thomas J., assignor to George Smith and John C. De Lang, Naples, N. Y. Hay-carrier .....	July 26, 1870
	Power, David G. (See Coon, S. Park, assignor.)	
	Powers, A. A. (See Hemenway, Collier V., assignor.)	
107,559	Powers, Albert E., and John T. Webster. (See Webster & Powers.) ..(Design.)	
	Powers, Charles M., and Thomas L. Robinson, Flushing, N. Y. Washing-machine.	Oct. 4, 1870
	Powers, Deborah, Albert E. and Nathaniel B. (See Hutchison, James, assignor.)	(Design.)
103,652	Powers, David J., Chicago, Ill. Lamp-extinguisher .....	May 31, 1870
3,898	Powers, D. J., assignor through mesne assignments to James Palmer, Madison, Wis. Straw-cutter .....	(Reissue) ..
105,246	Powers, Jesse, Chicago, Ill. Hod-elevator .....	Mar. 29, 1870
104,351	Powers, Mark H., Pike County, Ind. Evaporator and still .....	July 12, 1870
	Powers, Thomas H., Milwaukee, Wis. Furnace for smelting iron. (Extension).	June 14, 1870
101,036	Powers, Thomas H., assignor to self, George E. Burnham, and Daniel G. Rogers, Milwaukee, Wis. Water-wheel .....	May 24, 1870
103,079	Powers, Timothy J., New York, N. Y. Cartridge-case .....	Mar. 22, 1870
107,100	Powers, Titus, New York, N. Y. Lock .....	May 17, 1870
101,657	Powers, Walter W., Belleville, N. Y. Hitching-post .....	Sept. 6, 1870
107,537	Prall, William E., Washington, D. C. Inside sole for boots and shoes .....	April 5, 1870
107,538	Same.....Cover for boots and shoes .....	Sept. 20, 1870
109,662	Prall, William E., Washington, D. C., and Alden B. Rand, Staten Island, N. Y. Cloth-cutting attachment for sewing-machines .....	Sept. 20, 1870
	Prang, Louis, Boston, Mass. Library-shears .....	Nov. 29, 1870
104,996	Prang, Louis, Boston, Mass. Library-shears .....	July 5, 1870
105,124	Pratt, Charles E., assignor to self, M. Cohn & Co., and the West Bradley and Carey Manufacturing Company, Rahway, N. J. Hoop-skirt .....	July 5, 1870
99,232	Pratt, Daniel R., Worcester, Mass. Spring-nut .....	Jan. 25, 1870
99,473	Same.....New York, N. Y. Spring-headed screw-bolt .....	Feb. 1, 1870
99,787	Same.....Compound railway-rail .....	Feb. 15, 1870
	Pratt, Daniel R. (See Valentine, Farris & Barnes, assignor.)	
98,628	Pratt, David R., New Petersburg, Ohio. Sawing-machine .....	Jan. 4, 1870
100,064	Pratt, Francis A., assignor to Pratt, Whitney & Co., Hartford, Conn. Friction-clutch .....	Feb. 22, 1870
4,439	Pratt, Francis A., assignor to the Pratt and Whitney Company, Hartford, Conn. Drilling-machine .....	(Design) ..
104,766	Pratt, Henry C., Boston, Mass. Bottle-stopper .....	Oct. 25, 1870
	Pratt, Henry S., and Silas Barker. (See Barker & Pratt.)	June 28, 1870
100,801	Pratt, Henry T., New York, N. Y. Life-preserving stool .....	Mar. 15, 1870
	Pratt, Henry T., et al. (See Carver, John Eleazer, assignor.)	
110,282	Pratt, Joseph, and James H. Wentworth, Boston, Mass. Cooking-stove .....	Dec. 20, 1870
	Pratt, Luther C. (See Grant, John James, assignor.)	
110,588	Pratt, Miles, Watertown, Mass. Cooking-stove .....	Dec. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Pratt, Randal, deceased, by Mary G. Pratt, administratrix, Marple Township, Pa. Horse hay-rake..... (Disclaimer filed) ..	Jan. 7, 1870
	Same.....same..... (Extension of No. 1,893) ..	Jan. 7, 1870
	Same.....same..... (Extension of No. 1,894) ..	Jan. 7, 1870
	Same.....same..... (Extension of No. 1,895) ..	Jan. 7, 1870
	Pratt, S. S., and I. A. Clippinger. (See Clippinger & Pratt.)	
100,065	Pratt, T. Willis, assignor to self and Boston Machine Company, Boston, Mass. Draw-bridge.....	Feb. 22, 1870
104,198	Pratt, William, New York, N. Y. Vessel for packing butter and other articles.....	June 14, 1870
	Pratt, William, and Abby A. Williams. (See Sawyer, Charles B., assignor.)	
109,344	Pratt, William M., Chicago, Ill. Shaft-coupling.....	Nov. 15, 1870
	Pray, David T. (See Thing, R. W., assignor.)	
101,037	Pray, Onsville Evans, Portsmouth, N. H. Ticket-holder.....	Mar. 22, 1870
106,870	Prehn, John, N. Y. Washing-machine.....	Aug. 30, 1870
	Prentice, George J., and Henry Schild. (See Schild & Prentice.)	
	Prentice, Lewis. (See Schild & Prentice, assignors.)	
	Same..... (See Meyer & Schild, assignors.)	
108,185	Prentiss, Benjamin F., Benwood, W. Va. Automatic ventilator.....	Oct. 11, 1870
100,666	Prentiss, E. Freeman., Philadelphia, Pa. Telegraph-pole.....	Mar. 8, 1870
	Prentiss, N. A., et al. (See Bigard, Kellogg & Prentiss.)	
	Prescott, Andrew J., Catawissa, Pa. Car-coupling.....	Sept. 6, 1870
110,392	Same.....Studing-box.....	Dec. 20, 1870
99,947	Preston, Almon E., Battle Creek, Mich. Hay-loader.....	Feb. 15, 1870
102,706	Preston, James, Atchison, Kans. Grading-machine.....	May 3, 1870
	Preston, James, and Hiram C. Partridge. (See Partridge & Preston.)	
	Preston, John, and Daniel Long. (See Long & Preston.)	
103,502	Preston, Julius A., New Haven, Conn. Coal-barge.....	May 24, 1870
100,066	Preston, William B., North Chelsea, Mass. Steelyards.....	Feb. 22, 1870
107,811	Prevost, Emil, New York, N. Y. Liquid for galvanic batteries.....	Sept. 27, 1870
	Price, Benjamin, et al. (See Blackburn, Wood, Price & Sheriden.)	
105,979	Price, Daniel, Lockport, N. Y. Urinal attachment to a bed.....	Aug. 2, 1870
99,348	Price, Edwin and E. B., Norwalk, Conn. Machine for polishing marble.....	Feb. 1, 1870
100,802	Price, George W., Adrian, Mich. Thill-coupling.....	Mar. 15, 1870
101,038	Price, Jacob, San Leandro, Cal. Gang-plow.....	Mar. 22, 1870
99,560	Price, John A., Scranton, Pa. Base-burning stove.....	Feb. 8, 1870
104,493	Same.....Combined stove, door, and hearth.....	June 21, 1870
101,039	Price, John M., Buffalo Grove, Iowa. Bee-hive.....	Mar. 22, 1870
109,663	Price, Philip, West Chester, Pa. Show-case.....	Nov. 29, 1870
100,067	Price, Robert, New York, N. Y. Picture-envelope.....	Feb. 22, 1870
105,125	Same.....Paper for bonds, drafts, checks, &c.....	July 5, 1870
109,940	Price, Thomas, assignor to self and James Cruthers, Steubenville, Ohio. Coke-furnace.....	Dec. 6, 1870
	Price, Vincent C., and James F. Wiley. (See Atwood, Corydon F., assignor.)	
3,822	Price, Virgil, New York, N. Y. Scabbard..... (Design) ..	Jan. 25, 1870
4,264	Same.....Tip of a sword-scabbard..... (Design) ..	July 26, 1870
4,265	Same.....Sword-guard..... (Design) ..	July 26, 1870
101,040	Prickett, Joshua P., assignor to self and Joseph C. Hinchman, Medford, N. J. Machine for picking cranberries.....	Mar. 22, 1870
	Prier, Anton, and Adam Loeffelholz. (See Loeffelholz & Prier.)	
	Priest, Joseph K., and Roswell T. Smith. (See Smith & Priest)..... (Reissue.)	
	Priest, Joseph K., et al. (See Smith, Priest & Earl.)	
101,309	Prime, Eli S., Baltimore, Md. Gauge-rod.....	Mar. 29, 1870
	Prince, William L. (See Heminway, Benjamin E., assignor.)	
106,667	Prince, William R., Parkersburgh, W. Va. Potato-digger.....	Mar. 8, 1870
107,960	Prindle, D. R., East Bethany, N. Y. Tree and plant protector.....	Oct. 4, 1870
98,798	Prindle, Franklin B., Southington, Conn. Bolt-heading machine.....	Jan. 11, 1870
102,707	Same.....Die for forming king-bolts.....	May 3, 1870
102,708	Same.....Die for trimming king-bolts.....	May 3, 1870
105,489	Prindle, Russel B., Norwich, N. Y. Door-bolt.....	July 19, 1870
106,959	Pringle, Hugh, Green Point, N. Y. Lubricator.....	Aug. 30, 1870
106,279	Printz, James A., Reading, Pa. Sash-holder.....	Aug. 9, 1870
	Prior, A. M., et al. (See Waterbury, Enos and George N., assignors.)	
99,349	Prior, Jesse, Adrian, Mich. Fruit-preserving house.....	Feb. 1, 1870
103,503	Proctor, Adonijah H., assignor to self and B. J. Canfield, Galesburgh, Mich. Wash-boiler attachment.....	May 24, 1870
	Proctor, Thomas P. (See Wightman, Joseph C., assignor.)	
	Proprietors of the Tremont Mills. (See Burke, William A., assignor.)	
106,285	Propst, Elias, and James F. Avis, assignors to selves and William H. Hartley, Tipton, Ind. Book-holder.....	Aug. 9, 1870
103,775	Prosser, Treat T., Chicago, Ill. Nut-lock bolt.....	May 31, 1870
103,776	Same.....Screw-threading machine.....	May 31, 1870
	Prosser, William. (See Jackson, Francis, assignor.)	
103,927	Provost, Christopher T., New York, N. Y. Apparatus for packing preserves.....	June 7, 1870
104,494	Same.....Concentrating the juice of tomatoes.....	June 21, 1870
100,444	Pruett, William, Duquoin, Ill. Spring-seat for wagons.....	Mar. 1, 1870
109,544	Prushaw, Thomas H., assignor to Taylor, Day & Co., Fredonia, N. Y. Carriage-spring.....	Nov. 22, 1870
109,941	Puetz, Francis, Buffalo, N. Y. Buckle.....	Dec. 6, 1870
104,880	Puffer, Alvin Davis, Boston, Mass. Faucet.....	June 23, 1870
104,881	Same.....Soda-fountain.....	June 23, 1870
109,942	Same.....Apparatus for cooling soda-water and other liquids.....	Dec. 6, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,495	Pugh, David D., Brooklyn, N. Y. Clothes-line reel. (Antedated June 11, 1870).	June 21, 1870
	Pullen, Burden. (See Hooton, Marsena M., assignor.)	
101,504	Pullis, William W., St. Louis, Mo. Molding sash-weights .....	April 5, 1870
109,049	Pullis, William W., assignor to Thomas R. and John Pullis, St. Louis, Mo. Top of gas and water stop-cock boxes .....	Nov. 8, 1870
	Pullman, Albert B., and David Myers. (See Myers & Pullman.)	
105,126	Pullman, Nathaniel, New Oregon, Iowa. Extension-ladder .....	July 5, 1870
100,555	Pulse, Hiram, Waldron, Ind. Grain-drill .....	Mar. 8, 1870
108,728	Pulver, William H., Schuylerville, N. Y. Portable privy .....	Oct. 25, 1870
104,643	Punderford, James, New Haven, Conn. Metal sole for boots and shoes .....	June 21, 1870
108,516	Purcell, Joseph L., Thompson, Ill. Gang-plow .....	Oct. 18, 1870
106,077	Purcell, Thomas W., Fond du Lac, Wis. Pipe-boring machine .....	Aug. 2, 1870
101,658	Purchase, Thomas E., assignor to self and Samuel T. Hodgkins, Reading, Pa. Puddling and other furnaces .....	April 5, 1870
108,293	Purdey, Nathan, Providence, Pa. Box-opener .....	Oct. 11, 1870
	Purdy, Alexander, and Charles S. Banker. (See Banker & Purdy.)	
107,812	Purdy, Calvin D., La Porte, Ind. Bedstead-fastening .....	Sept. 27, 1870
106,960	Purdy, Chester, Bedford, Ohio. Saw-mill .....	Aug. 30, 1870
	Purdy, Edwin, <i>et al.</i> (See Howe, Albert K., assignor.)	
108,388	Purdy, Hiram, Burlington, Iowa. Ageing alcoholic liquors .....	Oct. 18, 1870
101,505	Purdy, Thomas C., Janesville, Wis. Fruit-jar .....	April 5, 1870
107,719	Purington, Turner C., Valejo, Cal. Steering-apparatus .....	Sept. 27, 1870
103,653	Purington, Turner C., assignor to self and A. Mayoux, Lincoln, Cal. Wrench ..	May 31, 1870
	Purrrington, G. (See Barrows, Thomas, assignor.)	
101,310	Purroy, Frederick L., New York, N. Y. Velocipede. (Antedated March 16, 1870)	Mar. 29, 1870
107,101	Pursell, Edward H., Galesburgh, Ill. Electro-magnetic railroad-alarm .....	Sept. 6, 1870
104,767	Pusey, Joshua, Philadelphia, Pa. Window-shade rack .....	June 28, 1870
107,720	Same.....Shutter-fastening .....	Sept. 27, 1870
109,144	Same.....Nut-cracker .....	Nov. 8, 1870
	Pusey, Lea, deceased, by Samuel G. Lewis, executor, Philadelphia, Pa. Arrange-ment of railroad platform-scales .....	Dec. 22, 1870
	Pusey, William M., <i>et al.</i> (See Makibbin, Thomas A., assignor.)	
4,042	Pustkucken, G., New York, N. Y. Package .....	May 17, 1870
101,506	Putman, John H., Gloversville, N. Y. Glove .....	April 5, 1870
108,624	Putnam, Abel, jr., Saratoga Springs, N. Y. Faucet .....	Nov. 1, 1870
102,862	Putnam, Albert T., Detroit, Mich. Brick-mold and bottom-board .....	May 10, 1870
	Putnam, Christopher C., <i>et al.</i> (See Robinson & Putnam.)	
104,352	Putnam, George W., Billerica, Mass. Water-vessel for steam fire-proof safes ..	June 14, 1870
100,923	Putnam, George W., assignor to self and L. B. Edmunds, South Glen's Falls, N. Y. Washing-machine .....	Mar. 15, 1870
4,050	Putnam, Henry W., Bennington, Vt. Apparatus for filling bottles .. (Reissue) ..	June 28, 1870
107,289	Putnam, Joel, Danvers, Mass. Shoe .....	Sept. 13, 1870
98,707	Putnam, Silas S., Dorchester, Mass. Machine for forging nails for horseshoes ..	Jan. 11, 1870
	Same.....Neponset, Mass. Machine for forging iron .....	Dec. 8, 1870
99,233	Putnam, Theodore A. B., New York, N. Y. Electro-magnetic railroad-switch alarm .....	Jan. 25, 1870
103,368	Putnam, Winthrop, Davis, Chicago, Ill. Safety-socket for whips .....	May 24, 1870
103,654	Putt, Daniel W., assignor to self, Walter G. Bronson, and Philip Brewer, Wells-ville, Ohio. Apparatus for teaching students the use of telegraphic instru-ments .....	May 31, 1870
	Pye, William H. M. (See Hopkins, Joseph W., assignor.)	
110,233	Pykiet, George F., Fairfield, Ill. Cutter for plows .....	Dec. 20, 1870
105,247	Pyle, William, Wilmington, Del. Manufacture of leather .....	July 12, 1870
106,505	Pyron, Tapley B., Springfield, Mo. Horse-power .....	Aug. 16, 1870
99,109	Quackenbush, Abram J., and Guilford Hawn, Fort Plain, N. Y. Device for baking bread .....	Jan. 25, 1870
110,234	Quackenbush, James H., Luddington, Mich. Spring bed-bottom .....	Dec. 20, 1870
104,496	Quaintance, Jesse, Bucyrus, Ohio. Quartz-crusher .....	June 21, 1870
	Quantin, Alphonse, deceased, by Jane Quantin and Henry A. Pintard, adminis-trators, Philadelphia, Pa. Method of bottling fluids under gaseous press-ure .....	Feb. 19, 1870
102,153	Quarles, John P., Richmond, Va. Paper-file .....	April 19, 1870
107,197	Quay, William, and Ezra M. Hinsdale, Troy, N. Y. Stove-grate .....	Sept. 6, 1870
105,844	Query, Elam M., Harris Depot, N. C. Subsoil-plow .....	July 26, 1870
106,406	Quimby, Asahel, Salem, Mass. Wagon-brake .....	Aug. 16, 1870
	Quimby, David S., jr. (See Savage, Silas T., assignor.)	
	Quimby, Julius F., <i>et al.</i> (See Hawks, Elizabeth, assignor) .....	(Disclaimer.)
106,203	Quimby, Watson F., Wilmington, Del. Arching-brick .....	Aug. 9, 1870
	Quin, Hugh P., and James C. Branch. (See Branch & Quinn.)	
	Quinn, Nelson J. (See Hutson, William C., assignor.)	
110,158	Quinn, Patrick, South New Market, N. H. Steam-boiler .....	Dec. 13, 1870
105,724	Quinn, Robert, Whitefield, Miss. Horse-power .....	July 26, 1870
102,321	Quinn, William, Philadelphia, Pa. Velocipede. (Antedated April 19, 1870) ....	April 26, 1870
103,777	Rabb, William Smith, Winstsborough, S. C. Plow. (Antedated May 19, 1870) ..	May 31, 1870
105,845	Racine, Henry, Paola, Kans. Brake for wagons .....	July 26, 1870
102,709	Raddin, John, Lynn, Mass. Hub for road-carriages .....	May 3, 1870
108,825	Same.....Car-wheel. (Antedated Oct. 19, 1870) .....	Nov. 1, 1870
99,705	Radley, John P., Albany, N. Y. Hammer .....	Feb. 8, 1870
103,238	Radston, Jacob, San Francisco, Cal. Frame for street-lamps, &c. ....	May 17, 1870
3,960	Raezer, Mathias, assignor through mesne assignments to Alzirus Brown, Worcester, Mass. Horse hay-rake .....	May 3, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,002	Rager, William B., and Michael Henney. ( <i>See Henney &amp; Rager.</i> ) Raible, John, Matthias Reis, and John Ritter, Chicago, Ill. Self-cleaning filter for hydrants.....	Jan. 18, 1870
108,389	Raiford, P. T. ( <i>See Milliorn, George, assignor.</i> )	
108,050	Rainey, John, Brooklyn, N. Y. Oven.....	Oct. 18, 1870
107,102	Raisbeck, James and Thomas A., New York, N. Y. Water-heater.....	Oct. 4, 1870
102,039	Ralston, Joe, Brenham, Texas. Cotton-gin feeder.....	Sept. 6, 1870
104,768	Ramel, Pierre Francois, and Jean Drogat, France. Loom.....	April 19, 1870
98,521	Ramler, David, Union Deposit, Pa. Automatic fan.....	June 21, 1870
108,390	Ramsay, William Alexander, Philadelphia, Pa. Shirt-sleeve.....	Jan. 4, 1870
108,051	Ramsdell, Richard Robley, and George Albert Whitcomb, Marlborough Depot, N. H. Balance-pendulum for clocks.....	Oct. 18, 1870
110,393	Ramsey, Blackman A., Trenton, Tenn. Seed-planter.....	Oct. 4, 1870
103,353	Same.....Cotton-planter. (Antedated Dec. 13, 1870).....	Dec. 20, 1870
108,729	Ramsey, Comfort R., Farmers' Center, Ohio. Clod-crusher and pulverizer.....	June 14, 1870
101,311	Ramsey, Henry B., assignor to self and Edward J. Hughes, Rockville, Ind. Bedstead.....	Oct. 25, 1870
106,618	Ramsey, Robert, and Charles Stafford, New Wilmington, Pa. Railway-gate.....	Mar. 29, 1870
101,912	Ramsey, Thomas S., et al. ( <i>See Patterson, N. A., assignor.</i> )	
101,913	Ramseyer, Nicholas, Farmersville, Ill. Wagon and buggy brace.....	Aug. 23, 1870
101,914	Rand, Addison C., Westfield, Mass. Whip.....	April 12, 1870
101,915	Same.....same.....	April 12, 1870
102,863	Same.....same.....	April 12, 1870
	Same.....same.....	April 12, 1870
	Same.....same.....	May 10, 1870
100,668	Rand, Alden B., et al. ( <i>See Gale, L. D., assignor.</i> ).....(Two cases.) (Reissue.) Same.....( <i>See Rand, Alonzo C., assignor.</i> )	
110,159	Rand, Alden B., and William E. Prall. ( <i>See Prall &amp; Rand.</i> )	
107,539	Rand, Alonzo C., assignor to William J. Nichols, Alden B. Rand, and Richard H. Brown, New York, N. Y. Manufacture of illuminating-gas.....	Mar. 8, 1870
9,591	Rand, Charles R., Dubuque, Iowa. Sash-balance.....	Dec. 13, 1870
	Rand, Franklin. P. Pawtucket, R. I. Wrench.....	Sept. 20, 1870
	Rand, J. B. ( <i>See Call, Horace, assignor.</i> )	
109,545	Rand, James M., Chicago, Ill. Horse-power.....	Feb. 8, 1870
110,498	Rand, William, and Daniel Bibbee. ( <i>See Bibbee &amp; Rand.</i> )	
101,507	Randal, Alexander R., Avola, Mo. Wind-mill.....	Nov. 22, 1870
102,591	Randall, Charles A., and Theodore M. Foote. ( <i>See Foote &amp; Randall.</i> )	
	Randall, Francis W., Tekonsha, Mich. Grain-binder. (Antedated Dec. 17, 1870).....	Dec. 27, 1870
	Randall, Francis W., assignor to Ira B. Buell, Burlington, Mich. Mode of securing horse-powers to the ground.....	April 5, 1870
108,826	Randall, John T., assignor to F. W. Elder & Co., Baltimore, Md. Apparatus for polishing coffee, &c.....	May 3, 1870
101,162	Randall, Joseph F., Warren, Ohio. Warp-tension mechanism for looms.....	Nov. 1, 1870
110,499	Randles, Joseph, Jersey City, N. J. Variable cut-off.....	Mar. 22, 1870
4,127	Randolph, James L., assignor to S. L. Denny, Berkeley Springs, W. Va. Lock-nut.....	Dec. 27, 1870
99,948	Randolph, Peter F., Jerseyville, Ill. Polishing-machine..... (Reissue).....	Sept. 20, 1870
107,623	Randolph, Richard, Washington, D. C. Railway-rail splice.....	Feb. 15, 1870
107,624	Randolph, Richard F., jr., East Palestine, Ohio. Apparatus for coupling cars.....	Sept. 20, 1870
105,597	Raney, James, New Castle, Pa. Water-wheel case.....	Sept. 20, 1870
4,089	Rank, Amos, Salem, Ohio. Harvester.....	July 19, 1870
107,721	Same.....Harvester-rake..... (Reissue).....	Aug. 2, 1870
107,813	Same.....same.....	Sept. 27, 1870
108,052	Rankin, Andrew, Philadelphia, Pa. Spring-hinge for doors, &c.....	Sept. 27, 1870
100,803	Same.....Shutter-fastener.....	Oct. 4, 1870
109,943	Rankin, John C., Mount Vernon, N. Y. Clothes-line holder.....	Mar. 15, 1870
110,394	Same.....Wagon-seat fastening.....	Dec. 6, 1870
98,522	Rankin, Thomas L., Granville, Ill. Refrigerating-car.....	Dec. 20, 1870
110,071	Ranney, Evander W., New York, N. Y. Composition for concrete pavements.....	Jan. 4, 1870
101,916	Ranous, Francis M., Yreka City, Cal. Combined lock and latch.....	Dec. 13, 1870
107,198	Ransom, Albion, Albany, N. Y. Reservoir for cooking-stoves.....	April 12, 1870
4,043	Ransom, Ezra, Flint, Mich. Packed rotating valve-stem.....	Sept. 6, 1870
4,044	Ransom, Samuel H., Albany, N. Y. Stove-plate..... (Design).....	May 17, 1870
4,045	Same.....same..... (Design).....	May 17, 1870
4,046	Same.....same..... (Design).....	May 17, 1870
4,047	Same.....same..... (Design).....	May 17, 1870
4,048	Same.....same..... (Design).....	May 17, 1870
108,627	Ransome, Ernest L., England. Removing soluble salts from artificial stone.....	Oct. 25, 1870
99,350	Raoul, W. G., Independence, Iowa. Grooving-machine.....	Feb. 1, 1870
99,351	Same.....Fare-box for railroad-cars.....	Feb. 1, 1870
98,708	Raper, William B., Carthage, Ill. Corn-plow.....	Jan. 11, 1870
107,408	Raplee, Abijah L., assignor to Carrie R. Laman, Edwin, N. Y. Journal-box for railroad-cars.....	Sept. 13, 1870
104,199	Rapp, Matthias, Rapp's Mill, Va. Turbine-wheel.....	June 14, 1870
104,062	Ratterman, Henry A., Cincinnati, Ohio. Machine for pitching lager-beer and other casks.....	June 7, 1870
99,474	Rauch, Jonas, Selin's Grove, Pa. Oil-cloth cutter.....	Feb. 1, 1870
99,706	Rauch, J. E., Selin's Grove, Pa. Scaffold and ladder.....	Feb. 8, 1870
	Rauh, Samuel, and John H. Kappelhoff. ( <i>See Kappelhoff &amp; Rauh.</i> ) (Two cases.) (Design).....	
	Same.....( <i>See Kappelhoff &amp; Rauh.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,285	Rausch, John, Huntington, Ind. Boot-crimping machine. (Antedated Dec. 9, 1870)	Dec. 20, 1870
109,755	Rawson, Solomon and Isaac, Almond, N. Y. Harvester	Nov. 29, 1870
105,248	Ray, Alfred, and Benjamin F. Monson, Shelbina, Mo. Scaffolding	July 12, 1870
	Ray, Francis B. (See Dean, Charles S., assignor.)	
100,445	Ray, James S., East Haddam, Conn. Coffin-handle	Mar. 1, 1870
106,619	Ray, Nathaniel M., Surrey, Me. Boat-detaching apparatus	Aug. 23, 1870
108,827	Rayer, William Anderson, and William Stillwell Lincoln, assignors to selves and Abijah B. Lincoln, Boston, Mass. Sewing-machine	Nov. 1, 1870
	Rayl, Samuel Garret, Agency City, Iowa. Double-shovel plow	Sept. 13, 1870
99,276	Rayls, Jacob, Washington, Ill. Paint-brush	Jan. 25, 1870
99,592	Raymond, Charles H., Southington, Conn. Grooving-machine for sheet-metal	Feb. 8, 1870
99,788	Same.....Beading-machine for sheet-metal	Feb. 15, 1870
	Raymond, Charles H., and Albert M. Healey. (See Healey & Raymond.)	
101,765	Raymond, Fitch, Cleveland, Ohio. Gate	April 12, 1870
106,961	Same.....Grain-bin	Aug. 30, 1870
105,567	Raymond, Fitch, assignor of one-half interest to A. Miller, Cleveland, Ohio. Grain-bin	July 12, 1870
109,839	Raymond, Hiram, Tecumseh, Mich. Grain-separator	Dec. 6, 1870
109,840	Raymond, John G., Rondout, N. Y. Washing-machine	Dec. 6, 1870
101,041	Raymond, Saxon J., Brooklyn, N. Y. Knife for splitting wood	Mar. 22, 1870
	Raymond, Seymour, and Joseph Campbell. (See Campbell, John D., assignor.) (Design.)	
108,517	Rayney, John, Brooklyn, N. Y. Bakers' oven	Oct. 18, 1870
99,593	Raynor, Hiram M., New York, N. Y. Pin for artificial teeth	Feb. 8, 1870
	Raynor, Samuel, & Co. (See Ball, James, assignor.)	
	Raynor, William, and William Beers. (See Beers & Raynor.)	
108,828	Raynsford, Frederick, assignor to self and C. L. Bonchard, Grand Rapids, Mich. Low-water indicator	Nov. 1, 1870
100,556	Read, Daniel B., and James H. Clapp, assignors through mesne assignments to C. C. Dickerman, Providence, R. I. Lock	Mar. 8, 1870
3,907	Read, John B., assignor to the Okra Paper Company, New York, N. Y. Manufacture of paper (Reissue)	April 5, 1870
104,200	Read, Joseph, Philadelphia, Pa. Heel for boots and shoes	June 14, 1870
107,722	Read, Joseph A., Philadelphia, Pa. Cover for stove-pipe holes	Sept. 27, 1870
103,655	Read, Josiah M., Boston, Mass. Cooking-stove	May 31, 1870
104,497	Same.....Gridiron for stoves and ranges	June 21, 1870
110,589	Read, Josiah M., and John M. Smith, Boston, Mass. Broiler and toaster	Dec. 27, 1870
103,928	Read, William, jr., assignor to self and William Read, Boston, Mass. Lamp-shade	June 7, 1870
	Read, William J., and William B. Johns. (See Johns & Read.)	
104,201	Reagan, William, New York, N. Y. Caster for billiard-tables and furniture	June 14, 1870
108,730	Ream, George W., Canton, Ohio. Plow	Oct. 25, 1870
	Reamer, Benjamin, and Cornelius Van Derzee. (See Van Derzee & Reamer.)	
109,944	Reaney, W. B., Chester, Pa. Marine-engine	Dec. 6, 1870
4,286	Reat, Robert L., Charleston, Ill. Neck-yoke, ring, and slide (Design)	Aug. 9, 1870
109,347	Rebman, John, Binkley's Bridge, Pa. Cultivator	Nov. 15, 1870
3,863	Reckendorfer, Joseph, New York, N. Y. Pencil (Reissue)	Mar. 1, 1870
	Same.....(See Bartholomew, William N., assignor.)	
	Same.....same.....(Design.)	
	Same.....(See Muller & Benson, assignors) (Two cases.)	
	Reckless, Walter, et al. (See Wilson, Joseph B., assignor.)	
	Record, Israel B., et al. (See Allen, Record, Rood & Hayden.)	
103,391	Redd, William M., Hazel Green, Wis. Grain-separator	Oct. 18, 1870
	Redding, Jerome, and Charles Williams, jr. (See Williams & Redding.)	
	Redfield & Rice Manufacturing Company. (See Downing, George W., assignor.) (Design.)	
100,323	Redfield, Benjamin B., Lapeer, Mich. Filter for cisterns	Mar. 1, 1870
	Redington, J. C. O. (See Zawadski, Alfred, assignor.)	
98,629	Redline, John G., Lanark, Ill. Sad-iron heater	Jan. 4, 1870
103,656	Redlinger, Mathias, Freeport, Ill. Wrench. (Antedated May 19, 1870)	May 31, 1870
	Redman, Selden D., et al. (See Shaw, Walter, assignor.)	
107,540	Reece, William R., assignor to self, William Garrett, and Michael Moll, Tremont, Pa. Safety-valve	Sept. 20, 1870
	Reed & Barton. (See Gill, George, assignor.) (Two cases.) (Design.)	
	Same.....(See Parkin, William, assignor.) (Three cases.) (Design.)	
	Reed, Alfred A., jr. (See Whitmore, Nathaniel Gilbert, assignor.)	
105,368	Reed, Alfred Graham, Philadelphia, Pa. Corpse-preserving case	July 12, 1870
108,628	Reed, Charles D., Polo, Ill. Gate	Oct. 25, 1870
102,864	Reed, Eden, assignor to self and Lewis L. Warren, St. Louis, Mo. Alarm-till	May 10, 1870
105,846	Reed, Edwin, Kingston, Mass. Machine for pressing seams and cutting welts for boots and shoes	July 26, 1870
104,644	Reed, Franklin, Canton, Mass. Trowel	June 21, 1870
104,645	Same.....Lathe for making awl-handles	June 21, 1870
102,154	Reed, George, William C. Hoagland, and John J. Newsom, Brooklyn, Cal. Screen-attachment for windows	April 19, 1870
	Reed, Henry G., et al. (See Parkin, William, assignor.) (Design.)	
	Same.....(See Leach, Thomas, assignor.)	
107,625	Reed, Herbert P., and Thomas E. Wilson, Peabody, Mass. Machinery for dressing skins	Sept. 20, 1870
	Reed, Jacob, et al. (See Berkstresser, George, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,202	Reed, James Clarence, New York, N. Y. Comb .....	June 14, 1870
	Reed, John Milton, <i>et al.</i> (See Douglas & Reed.)	
	Reed, L. F. (See Bennett, Zelotes R., assignor.)	
104,498	Reed, Linus G. and Erastus E., Peoria, Ill. Cultivator and roller combined....	June 21, 1870
108,518	Reed, Moses, Little Rock, Ark. Cotton and corn cultivator.....	Oct. 18, 1870
103,369	Reed, Thomas L., Providence, R. I. Flexible tubing or hose.....	May 24, 1870
108,392	Reed, Thomas M., Germantown, Ohio. Cultivator .....	Oct. 18, 1870
102,155	Reed, T. K., assignor to Gordon McKay, trustee of the McKay Sewing-Machine Association, East Bridgewater, Mass. Machine for uniting boot and shoe soles to their uppers .....	April 19, 1870
	Reed, Timothy K., and Arza B. Keith. (See Keith & Reed.)	
109,756	Same.....East Bridgewater, Mass. Machine for heeling boots .....	Nov. 29, 1870
	Reed, William, and Joel H. Rhodes. (See Rhodes & Reed.)	
109,452	Reed, William N., Arlington, Va. Drip-receiving grate.....	Nov. 22, 1870
105,847	Reeder, A. F., Normal, Ill. Steam-governor .....	July 26, 1870
3,980	Reeder, Charles W., Chillicothe, Mo. Farm-fence .....	May 17, 1870
103,393	Same.....Trenton, Mo. Washing-machine .....	Oct. 18, 1870
	Reeder, Oliver, and W. T. Howard. (See Howard & Reeder.)	
99,594	Rees, Edwin, Stoddartville, Pa. Clothes washer and drier.....	Feb. 8, 1870
102,865	Rees, Edwin, assignor to self and Lewis Stull, Stoddartville, Pa. Scrubbing-brush and mop-wringer .....	May 10, 1870
106,620	Rees, James, Pittsburgh, Pa. Paddle-wheel .....	Aug. 23, 1870
	Rees, Martin, and George H. Bliss. (See Bliss & Rees.)	
99,235	Rees, Thomas, Judson, Minn. Washing-machine .....	Jan. 25, 1870
105,490	Reese, Abram and Jacob, Pittsburgh, Pa. Machine for making horseshoe blanks .....	July 19, 1870
104,997	Reese, Jacob, Pittsburgh, Pa. Metallic lath, and in billets from which the same may be produced .....	July 5, 1870
	Reeside, Edwin. (See Joyce, Charles R., assignor.)	
	Reeve, R. H. and B. C. (See Paterson, James, assignor) .....	(Design.)
110,395	Reeve, Selah, Chicago, Ill. Foundation for pavements .....	Dec. 20, 1870
4,512	Reeves, Joseph W., assignor to W. H. French, Philadelphia, Pa. Center-piece for ceilings .....	(Design.)
4,513	Same.....same .....	(Design.)
99,707	Regan, Edward, Indianapolis, Ind. Flanging-apparatus .....	Dec. 13, 1870
3,966	Same.....Device for flanging flue-holes of boiler-heads .....	Feb. 8, 1870
108,186	Regan, Simon, and Edward Meusy, La Motte, Iowa. Gate .....	May 10, 1870
	Regensburger, Jacob, <i>et al.</i> (See Palmer, Charles H., assignor.)	
102,710	Rehfuss, George, assignor to American Button-Hole Overseaming and Sewing Machine Company, Philadelphia, Pa. Sewing-machine .....	Oct. 11, 1870
100,924	Rehn, Isaac, assignor to self and Norris Peters, Washington, D. C. Mode of producing photo-lithographic transfers .....	May 3, 1870
	Reichard, Henry C., and Henry P. Lauer. (See Lauer & Reichard.)	
100,446	Reichenbach, William, and F. Roschdiantzky, Chicago, Ill. Extension-table ..	Mar. 1, 1870
106,506	Reid, Adam, Buffalo, N. Y. Dripping-pan .....	Aug. 16, 1870
101,508	Reid, Archibald W., assignor to self and William H. Rugg, Schenectady, N. Y. Machine for scouring and setting out leather .....	April 5, 1870
101,380	Reid, C. L., Louisville, Ky. Convertible plow and cultivator.....	Mar. 29, 1870
104,882	Reid, David A., Wayne Township, Ind. Sorghum-stripper.....	June 23, 1870
	Reid, Frank, and Daniel O. Moore. (See Moore & Reid.)	
104,883	Reid, Hiram A., Beaver Dam, Wis. Harvester-attachment for raking and binding grain .....	June 28, 1870
	Reid, Hugh, and George W. Fisher. (See Fisher & Reid.)	
109,248	Reid, James, Catskill, N. Y. Propelling canal-boats. (Antedated Nov. 3, 1870).	Nov. 15, 1870
	Reid, Lawrence, and John Rogers. (See Rogers & Reid.)	
	Reid, William J., and Walter J. Morris. (See Morris & Reid.)	
100,324	Reid, William O., Vienna, N. C. Adjustable bedstead.....	Mar. 1, 1870
110,160	Same.....Anti-friction box for axles .....	Dec. 13, 1870
4,417	Reiff, William H., Philadelphia, Pa. Show-case.....	Oct. 11, 1870
	Reigart, John F., and Richard H. Chinn. (See Chinn & Reigart.)	
	Reilley, John O., and Isaac Ten Eyck. (See Ten Eyck & Reilley.)	
108,629	Reilley, John O., assignor to self, William Wallace Perkins, and Calvin C. Chaffee, Baltimore, Md. Cigar-machine .....	Oct. 25, 1870
104,646	Reilly, Michael, Covington, Ky. Harness-hook .....	June 21, 1870
98,630	Reim, William Oscar, Springfield, Ohio. Water-gauge for the tonnage of vessels.	Jan. 4, 1870
	Reimers, Frederick P. L., and E. H. Gustav Von Doehren. (See Von Doehren & Reimers.)	
102,433	Reinshagen, Peter W., assignor to self, Daniel Wiehl, Andrew P. Lusk, and John H. Buckman, Cincinnati, Ohio. Low-water indicator .....	April 26, 1870
104,884	Reinshagen, Peter W., assignor to self and John H. Buckman, Cincinnati, Ohio. Shaft-coupling.....	June 23, 1870
110,590	Same.....same .....	Dec. 27, 1870
	Reinshagen, Peter W., <i>et al.</i> (See Wiehl, Daniel, assignor.)	
	Reis, Matthias, <i>et al.</i> (See Raible, Reis & Ritter.)	
98,631	Reisinger, George W., Harrisburg, Pa. Globe-valve .....	Jan. 4, 1870
107,410	Reisinger, George W., and William A. Middleton, Harrisburgh, Pa. Corn-sheller.	Sept. 13, 1870
103,945	Reisinger, George W., assignor to William A. Middleton and Eugene Snyder, Harrisburgh, Pa. Corn-sheller .....	Dec. 6, 1870
100,804	Reister, George H., Washington, Iowa. Hay-raker and loader. (Antedated Feb. 26, 1870) .....	Mar. 15, 1870
	Reister, P. P., <i>et al.</i> (See Yount, Reister, Keepports & Yount.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,626	Reitz, Charles, Indianapolis, Ind. Electro-magnetic apparatus for medical use. Reitz, Charles, and Austin W. Allen. (See Allen & Reitz.) Remington, Charles H. (See Rice, Jacob E., assignor.)	Sept. 20, 1870
105,848	Renetzky, Augustus, Lincoln, Ill. Sawing-machine.	July 26, 1870
110,072	Reniers, Peter C., Pittsburgh, Pa. Basket for tile-grinders. (Antedated Dec. 10, 1870)	Dec. 13, 1870
98,709	Renshaw, David, assignor to Edward P. Bray, Brooklyn, N. Y. Spring-hinge. (Antedated Jan. 8, 1870)	Jan. 11, 1870
102,592	Rentchler, Henry, Belleville, Ill. Office register and directory	May 3, 1870
102,434	Renwick, Edward S., trustee. (See Paraf, Alfred, assignor.)	
3,967	Renwick, Edward S., New York, N. Y. Breech-loading fire-arm	April 26, 1870
	Same.....Millburn, N. J. Grate for furnaces. (Reissue)	May 10, 1870
	Same.....(See Paraf, Alfred, assignor.)	
	Same.....(See Perry & Goddard, assignors.)	
4,221	Requa, E. B., assignor to the Requa Patent Concave Burner and Chimney Company, New York, N. Y. Lamp-chimney. (Reissue)	Dec. 27, 1870
100,068	Requa, James E., Sonora, Cal. Thorough-brace	Feb. 22, 1870
	Requin, Charles F., and Emile F. Loiseau. (See Loiseau & Requin.)	
	Resor, William, and Co. (See Truesdale, Charles, assignor.) (Reissue)	
4,020	Resticaux, Thomas, Boston, Mass. Deodorizing petroleum	June 7, 1870
105,829	Restle, John, Boston, Mass. Transparent varnish	Nov. 1, 1870
98,799	Reuter, Conrad, assignor to Cincinnati Type Foundry, Cincinnati, Ohio. Printers' rule	Jan. 11, 1870
102,156	Reutti, Hermann, and Philipp Winkelhaus, Hamilton, Ohio. Apparatus for pitching beer and other barrels	April 19, 1870
	Rex, Abraham. (See Bennor, Joseph, assignor.) (Two cases.)	
106,204	Rex, William A., and Joseph M., jr., Butler, Ind. Car-coupling	Aug. 9, 1870
102,040	Reyer, George, Indianapolis, Ind. Harness-buckle	April 19, 1870
105,849	Reynerson, James H., and John Worrel, Clayton, Ind. Sulky-attachment to plows	July 26, 1870
103,453	Reynolds, Baker W., Evansville, Ind. Sediment-agitator for steam-boilers	Nov. 22, 1870
103,370	Reynolds, Martin T., Centreville, Ind. Dropping-platform for harvesters	May 24, 1870
98,800	Reynolds, C. M., Mifflin, Wis. Chimney-top	Jan. 11, 1870
100,925	Reynolds, Daniel M., Chicago, Ill. Folding crib and cradle	Mar. 15, 1870
103,050	Same.....Portable cradle or crib	Nov. 8, 1870
109,051	Same.....Table	Nov. 8, 1870
103,664	Reynolds, Demmon, Napanock, N. Y. Water-wheel	Nov. 29, 1870
99,949	Reynolds, Dexter, Albany, N. Y. Process and apparatus for the manufacture of salt	Feb. 15, 1870
	Reynolds, Dexter, and James W. Paige. (See Paige & Reynolds.)	
109,546	Same.....Albany, N. Y. Manufacture of salt	Nov. 22, 1870
104,647	Reynolds, George A., Rochester, N. Y. Machine for rolling metallic roofing-plates	June 21, 1870
107,290	Same.....Seaming the ends of metallic roofing-plates	Sept. 13, 1870
100,069	Reynolds, George H., New York, N. Y. Bookbinding	Feb. 22, 1870
	Reynolds, George H., et al. (See Rider, Alexander K., assignor.) (Two cases.)	
4,128	Reynolds, George S., assignor to Joseph H. Shireman, York, Pa. Horse hay-rake	Sept. 20, 1870
102,711	Reynolds, Henry, Aurora, N. Y. Machine for making chain-links. (Reissue)	May 3, 1870
104,885	Reynolds, Henry S., New York, N. Y. Coal-scuttle	June 28, 1870
100,188	Reynolds, J., Crystal Springs, Miss. Subsoil-plow and scraper combined	Feb. 22, 1870
	Reynolds, James, sr. (See McConaughy, Robert A., assignor.)	
102,866	Reynolds, Jesse, Philadelphia, Pa. Heating-drum	May 10, 1870
102,041	Reynolds, Michael, New York, N. Y. Cooling ale and beer. (Antedated April 7, 1870)	April 19, 1870
101,312	Reynolds, Nathaniel C., Ellsworth, Me. Boat-detaching apparatus	Mar. 29, 1870
	Reynolds, Newton, and Horace G. Nelson. (See Nelson, Thomas, assignor.)	
108,053	Reynolds, Reuben M., East Saginaw, Mich. Wheelbarrow	Oct. 4, 1870
100,070	Reynolds, Roscoe C., and Cyrus I. Barker, Lewiston, Me. Warping-machine	Feb. 22, 1870
4,354	Reynolds, Samuel, Allegheny City, Pa. Trace-carrier for harness. (Design)	Sept. 13, 1870
107,541	Reynolds, Samuel F., Auburn, N. Y. Machine for tempering sickle-sections, plane-irons, &c	Sept. 20, 1870
103,371	Reynolds, Thomas, Yonkers, N. Y. Machine for washing barrels	May 24, 1870
105,369	Reynolds, William, Manchester, N. H. Burglar-alarm	July 12, 1870
	Reynolds, William, et al. (See Jackson, Richard A., assignor.)	
99,475	Rhinelander, F. W., New York, N. Y. Railway-car coupling	Feb. 1, 1870
100,926	Same.....Spiral spring for railway-cars	Mar. 15, 1870
103,778	Same.....Car-spring	May 31, 1870
104,993	Rhoad, Frederick, Liberty Centre, Ohio. Sawing-machine	July 5, 1870
99,236	Rhoades, A. A., and Wiley Tash, Berlin, Ill. Pulverizing-attachment for plows	Jan. 25, 1870
98,632	Rhoades, George M., Hamilton, N. Y. Mechanical movement	Jan. 4, 1870
99,476	Rhoads, Jeremiah, Niles, Mich. Clamp for forming horseshoe calks	Feb. 1, 1870
105,980	Rhoads, John, assignor to self and William H. Harrison, Harrisburgh, Pa. Passenger-register for vehicles	Aug. 2, 1870
104,886	Rhodchand, William G., Piqua, Ohio. Scrubber and cleaner	June 28, 1870
	Rhodes, B. M., & Co. (See Sapp, William I., assignor.)	
105,370	Rhodes, Edward, assignor to self and Henry Disston & Son, Philadelphia, Pa. Reciprocating-saw mill	July 12, 1870
4,255	Rhodes, Edward, assignor to Henry Disston & Son, Philadelphia, Pa. Saw (Design)	July 19, 1870
4,497	Same.....same (Design)	Nov. 29, 1870
102,322	Rhodes, Joel H., and William Reed, Philadelphia, Pa. Velocipede	April 26, 1870
102,970	Rhodes, John H., Brooklyn, N. Y. Atmospheric valve for house-boilers	May 10, 1870
110,286	Rhodes, Vernon, Memphis, Tenn. Chamber-vessel	Dec. 20, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Ribble, John W., <i>et al.</i> (See Campbell, James A., assignor.)	
98,633	Ribon, Juan, New York, N. Y. Boring-machine	Jan. 4, 1870
104,999	Ricard, Hubert, assignor to self and George F. Eaton, Haverhill, Mass. Pegging-jack	July 5, 1870
	Rice, Arthur T., and William D. Mason. (See Mason & Rice.)	
99,237	Rice, Charles F., Brookfield, Mass. Shingle-machine	Jan. 25, 1870
100,071	Rice, Edwin T., New York, N. Y. Process of bleaching and cleaning vegetable fibers. (Antedated Feb. 10, 1870)	Feb. 22, 1870
101,659	Rice, Eli B., Madison, Wis. Harvester	April 5, 1870
104,499	Rice, George S., assignor to Vulcanite Jewelry Company, New York, N. Y. Pocket or "charm" letter-scale	June 21, 1870
	Rice, Henry J., and Charles E. Smith. (See Smith & Rice). (Three cases.)	
102,157	Rice, Israel L. G., Cambridge, Mass. Inking-apparatus for color-printing	April 19, 1870
104,203	Same. Inking-apparatus for printing-presses	June 14, 1870
104,204	Same. Apparatus for cure of spermatorrhoea	June 14, 1870
104,887	Same. Machine for making composition-roofing	June 28, 1870
108,630	Same. Inking-apparatus for color-printing	Oct. 25, 1870
108,830	Same. Railway-car brake	Nov. 1, 1870
109,249	Same. Paper-cutting machine	Nov. 15, 1870
	Rice, Israel L. G., and Saint Clair Denny. (See Denny & Rice.)	
103,779	Rice, Jacob E., assignor to self and Archibald A. Rice, Moline, Ill. Corn-harvester	May 31, 1870
106,205	Rice, Jacob E., assignor to self and Charles H. Remington, Moline, Ill. Drier	Aug. 9, 1870
108,187	Rice, James, Middletown, Ind. Extension-trunk	Oct. 11, 1870
	Rice, James R., <i>et al.</i> (See Rowell, Rice & Seeley.)	
105,249	Rice, John, Owego, N. Y. Raking-attachment for furnaces	July 12, 1870
106,206	Rice, Peter J., Ashtabula, Ohio, and David A. Scott, Cincinnati, Ohio. Air-heating steam-condenser	Aug. 9, 1870
106,207	Rice, Samuel G., Albany, N. Y. Mode of treating tobacco. (Antedated Aug. 5, 1870)	Aug. 9, 1870
104,648	Rice, Thomas C., Worcester, Mass. Paint for roofs	June 21, 1870
109,757	Same. Manufacture of paint	Nov. 29, 1870
106,507	Rice, Thomas H., Baltimore, Md. Sheave-block	Aug. 16, 1870
109,758	Rice, William S., Biddeford, Me. Window-shade	Nov. 29, 1870
102,867	Rich, Charles, Poughkeepsie, N. Y. Connection of springs for bed-bottoms, seats, &c	May 10, 1870
106,980	Rich, Charles, assignor to self and David S. Mallory, Poughkeepsie, N. Y. Spring for beds	Aug. 30, 1870
	Rich, Henry C., and Joseph C. Kent. (See Kent & Rich.)	
104,063	Rich, John, Painesville, Ohio. Lathe-chuck	June 7, 1870
107,291	Same. same	Sept. 13, 1870
	Rich, John, <i>et al.</i> (See Buffington, Nathaniel E., assignor.)	
108,935	Rich, John T., Philadelphia, Pa. Steam-generator	Nov. 1, 1870
108,936	Same. same	Nov. 1, 1870
102,158	Rich, Nathaniel Wiley, Swampscott, Mass. Apparatus for reefing sails	April 19, 1870
108,937	Richard, Jean Elie, assignor to self and Eugene C. Plumer, Columbia, S. C. Gas-apparatus	Nov. 1, 1870
107,542	Richard, William, Clyde, Ohio. Pruning-knife	Sept. 20, 1870
	Richards, Allan C., and John C. Hall. (See Hall & Richards.)	
	Richards, Allen C. (See Scott, David A., assignor.)	
	Richards, Alvan S., Montgomery County, Md. Carpet-stretcher	Nov. 1, 1870
	Richards, Celius E., and Henry C. Luther. (See Luther & Richards.)	
101,163	Richards, Charles L., New York, N. Y. India-rubber billiard-cushion	Mar. 22, 1870
100,189	Richards, George H., New York, N. Y. Eraser-attachment for pencils, &c	Feb. 22, 1870
104,769	Richards, Isaac P., Whitinsville, Mass. Punch	June 28, 1870
106,621	Richards, Isaac P., assignor to George Draper & Son, Whitinsville, Mass. Spindle-bolster	Aug. 23, 1870
4,145	Richards, John, Philadelphia, Pa. Band-saw frame. (Design)	June 7, 1870
109,665	Same. Manufacture of wrenches	Nov. 29, 1870
103,080	Richards, John, assignor to J. A. Fay & Co., Philadelphia, Pa. Planing-machine	May 17, 1870
104,770	Richards, John, and William H. Thorne, Philadelphia, Pa. Band-sawing machine	June 28, 1870
3,886	Richards, John D., Muscatine, Iowa. Projectile. (Reissue)	Mar. 22, 1870
101,509	Richards, Merritt, Princeton, Ill. Revolving plow-coulter	April 5, 1870
100,447	Richards, Philemon, Philadelphia, Pa. Nail-cutting machine	Mar. 1, 1870
109,666	Richards, Richard, Albany, N. Y. Safety-swivel	Nov. 29, 1870
105,371	Richards, Stephen M., assignor to self and Edgar R. Moffatt, St. Louis, Mo. Railway-track	July 12, 1870
110,287	Richards, Thomas C., New York, N. Y. Construction of ornamental-headed picture-nails	Dec. 20, 1870
110,500	Same. Nail for pictures, &c	Dec. 27, 1870
99,708	Richards, William J., Ferdinand M. Sofge, and Joseph H. Richards, La Fayette, Ind. Stringing and tuning piano-fortes	Feb. 8, 1870
	Richardson, Benjamin F. (See Lehnert, Carl, assignor.)	
109,052	Richardson, Benjamin F. and David, Martinsville, Iowa. Saw-mill	Nov. 8, 1870
	Richardson, Charles, <i>et al.</i> (See Case, Henry J., assignor). (Reissue.)	
100,190	Richardson, D. H., Henrietta, N. Y. Wagon-seat	Feb. 22, 1870
	Richardson, Edward P., and John C. Hancock. (See Hancock & Richardson.)	
102,159	Richardson, Everett P., Lawrence, Mass. Machine for trimming the heels of boots and shoes. (Antedated April 9, 1870)	April 19, 1870
102,042	Richardson, Francis, Hebron, Ill. Chimney	April 19, 1870
106,726	Richardson, George, Milwaukee, Wis. Bed-bottom	Aug. 23, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,103	Richardson, George, Milwaukee, Wis. Drain-pipe .....	Sept. 6, 1870
109,345	Richardson, George, Lowell, Mass. Take-up detaining-pawl .....	Nov. 15, 1870
	Richardson, George F., & Co. (See Bancroft, Melvin, assignor.) .....	
107,199	Richardson, George W., Taunton, Mass. Clothes-drier .....	Sept. 6, 1870
	Richardson, H., and Ellis Doty. (See Doty & Richardson.) .....	
99,709	Richardson, Haynes L., assignor to William, Daniel, and Julius R. Pomeroy, New York, N. Y. Splint for fracture of clavicle, &c. ....	Feb. 8, 1870
108,631	Richardson, James C., Prairie du Chien, Wis., and Lemuel Taylor, Jordan, Wis. Churn. (Antedated Sept. 30, 1870) .....	Oct. 25, 1870
107,292	Richardson, James H., Westport, N. Y. Animal-trap .....	Sept. 13, 1870
105,598	Richardson, John R., Max Meadows, Va. Locomotive-wheel .....	July 19, 1870
106,962	Richardson, John R., Newcastle, Pa. Water-wheel .....	Aug. 30, 1870
101,766	Richardson, Joseph, Ballston Spa, N. Y. Fowl-feeder .....	April 12, 1870
109,250	Richardson, Lionel W., Roseoe, Ill. Plow .....	Nov. 15, 1870
	Richardson, Mark S., et al. (See Pond & Richardson.) .....	
101,381	Richardson, Matthew, Brooklyn, N. Y. Cigar-box .....	Mar. 29, 1870
108,831	Richardson, Nathan B., Somerville, N. J. Carriage-top fixture .....	Nov. 1, 1870
103,372	Richardson, Simon H., assignor to self and T. N. Egery, Bangor, Maine. Hauling up logs .....	May 24, 1870
99,477	Richardson, T. M., Stockton, Me. Flooring-set .....	Feb. 1, 1870
	Richardson, William A., et al. (See Mahurin, Stephen, assignor.) .....	
107,723	Richardson, William F., Pittsburgh, Pa. Steam-engine .....	Sept. 27, 1870
4,223	Richardson, William H., West Roxbury, Mass. Paper-collar box. (Design) ..	July 12, 1870
99,110	Richardson, William W., Chicago, Ill. Saw-handle .....	Jan. 25, 1870
103,637	Same. Water-wheel .....	May 31, 1870
106,407	Richer, François Charles, Gilmer, Texas. Coffee-mill .....	Aug. 16, 1870
109,547	Richmond, Alexander, jr., Dayton, Ohio. Hydrant .....	Nov. 22, 1870
108,188	Richmond, Edwin Adison, assignor to self and Charles Watson. San Francisco, Cal. Piston-rod packing .....	Oct. 11, 1870
103,658	Richmond, Gideon B., Charlestown, Mass. Spring bed-bottom .....	May 31, 1870
	Richmond, Rufus B. (See Hildreth, R. S., assignor.) .....	
	Richmond, Seelye, et al. (See Makibbin, Thomas A., assignor.) .....	
100,669	Richter, Charles O., New York, N. Y. Reversible shirt .....	Mar. 8, 1870
106,871	Richter, Emil F., Prussia. Cleansing wool .....	Aug. 30, 1870
105,725	Rickard, William, assignor to self and E. K. Meigs, Jersey City, N. J. Floating tide-dock .....	July 26, 1870
105,491	Rickards, William, jr., Franklin, Pa. Buffer-head for car-couplings .....	July 12, 1870
102,593	Ricker, John W., Chelsea, Mass. Corn-sheller .....	May 3, 1870
	Ricker, Samuel, and Francis M. Bachman. (See Bachman & Ricker.) .....	
	Riddell, John W. (See Chatham, Walter S., assignor.) .....	
	Riddell, William. (See Bletcher, Thomas, assignor.) .....	
110,288	Riddick, Archibald A., Franklin, Va. Liniment for the cure of rheumatism ...	Dec. 20, 1870
98,634	Rider, A. K., Elizabeth City, N. J. Liquid-meter .....	Jan. 4, 1870
101,510	Rider, Alexander K., assignor to self, C. H. DeLameter, and George H. Reynolds, New York, N. Y. Compound blower .....	April 5, 1870
109,053	Same. Balance slide-valve .....	Nov. 8, 1870
	Rider, A. K., and C. S. Westcott. (See Westcott & Rider.) .....	
100,191	Rider, John, New York, N. Y. Life-raft .....	Feb. 22, 1870
105,250	Rider, John F. C., South New Market, N. H., and Emerson P. Brownell, Providence, R. I. Spool-machine .....	July 12, 1870
100,448	Rider, John P., and James R. Bird, assignors to the New York Rubber Company, Brooklyn, N. Y. Covering the end of rubber-hose .....	Mar. 1, 1870
107,961	Rider, Leman P., assignor to self, William Yagle, and A. Ward, Pittsburgh, Pa. Hull for vessels .....	Oct. 4, 1870
106,408	Rider, Samuel, assignor to self, Samuel R. and Albert R. Griffith, and Andrew W. Cox, Oil City, Pa. Portable iron derrick .....	Aug. 16, 1870
107,543	Ridge, Joseph, assignor of one-fourth interest to Stephen S. Strattan, Wayne County, Ind. Carriage-wheel .....	Sept. 20, 1870
102,435	Ridgway, Jacob Elwood, Philadelphia, Pa. Street-car .....	April 26, 1870
106,622	Ries, Henry, Norwalk, Ohio. Grain-thresher, &c. ....	Aug. 23, 1870
103,929	Rigby, James, and Philip A. Palmer, Marietta, Ohio. Gas-retort .....	June 7, 1870
108,394	Same. Steam-generator and hot-water apparatus .....	Oct. 18, 1870
104,354	Rigby, Seth, 3d, Newcastle, Pa. Brick-machine .....	June 14, 1870
100,325	Rigell, Mark, assignor to self, Robert D., William D., and Robert F. Joy, Newton, Ala. Plow .....	Mar. 1, 1870
100,326	Same. same .....	Mar. 1, 1870
104,649	Rigg, John, Joshua E. Hall, and Carnot F. Fenton, Cleveland, Ohio. Oil-well reamer .....	June 21, 1870
108,054	Riggs, Abner, Frostburgh, Md. Washing-machine .....	Oct. 4, 1870
107,104	Riggs, James W., assignor to self and Phillip Anshutz, Wade, Ohio. Capstan. (Antedated Sept. 1, 1870) .....	Sept. 6, 1870
105,000	Rigsbee, Jordan, Chapel Hill, N. C. Cotton-seed planter .....	July 5, 1870
4,372	Riker, William, Newark, N. J. Badge .....	Sept. 27, 1870
4,134	Riley, John, and Charles W. Bissell, assignors through mesne assignments to the United States and Foreign Salamander Felting Company, Troy, N. Y. Composition for covering steam-boilers, steam-pipes, &c. .... (Reissue) ..	Sept. 27, 1870
108,055	Riley, John, assignor to the United States and Foreign Salamander Belting Company, Troy, N. Y. Composition for covering steam-boilers and for other purposes .....	Oct. 4, 1870
3,908	Riley, John M., Newark, N. J. Handle-cap for satchels. (Design) ..	Mar. 15, 1870
103,081	Riley, Peter, Lancaster, Pa. Steam-generator .....	May 17, 1870
101,511	Riley, William, Madison County, Miss. Washing-machine .....	April 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,632	Riley, William, jr., Terre Haute, Ind. Dumping-car.....	Oct. 25, 1870
107,293	Rimmer, Thomas, South Braintree, Mass. Marine steam-boiler.....	Sept. 13, 1870
109,548	Ring, Edward F., St. Louis, Mo. Apparatus for stirring and cooling lard.....	Nov. 22, 1870
102,712	Ringle, Jacob, Jersey City, N. J. Wash-boiler apparatus.....	May 3, 1870
101,042	Rinkle, David, assignor to self and Charles C. Hunt, Indianapolis, Ind. Stomach-bitters.....	Mar. 22, 1870
3,834	Ripley, Daniel C., Birmingham, Pa. Stem for glassware..... (Design)	Feb. 1, 1870
3,842	Same..... Baptismal font..... (Design)	Feb. 8, 1870
104,205	Same..... Mold for glass lamps.....	June 14, 1870
107,544	Ripley, Daniel C., Pittsburgh, Pa. Glass lamp.....	Sept. 20, 1870
101,512	Ripley, D. C., assignor to Ripley & Co., Birmingham, Pa. Glass lamp.....	April 5, 1870
	Ripley, Edward, and Loring Atwood. (See Atwood & Ripley.)	
78,635	Ripley, Moses H., Minneapolis, Minn. Harvester. (Antedated Dec. 24, 1869)...	Jan. 4, 1870
3,805	Rippon, William F., and George A. Johnson, Providence, R. I. Lamp-burner. (Reissue).....	Jan. 25, 1870
107,627	Risdon, Theodore H., Mount Holly, N. J. Water-wheel.....	Sept. 20, 1870
	Rishe, Daniel, and Hiram D. Chance. (See Chance & Rishe.)	
109,759	Risler, Stacy, Locktown, N. J. Churn.....	Nov. 29, 1870
110,073	Risley, Arthur G., Utica, N. Y. Device for trimming cylindrical brushes.....	Dec. 13, 1870
100,927	Ritchel, Charles F., Newark, N. J. Machine for preparing wood for inlaying.....	Mar. 15, 1870
	Same..... (See Baldwin, James S., assignor.)	
101,767	Ritchey, Michael, Paterson, N. J. Steam-generator.....	April 12, 1870
105,492	Ritchie, Edward S., Brookline, Mass. Marine-compass.....	July 19, 1870
4,061	Ritchie, Francis, assignor through mesne assignments to Jewett & Root, Troy, N. Y. Cooking-stove..... (Reissue)	July 5, 1870
106,208	Ritchie, Francis, assignor to Jewett & Root, Troy, N. Y. Cooking-stove.....	Aug. 9, 1870
	Ritchie, Francis, et al. (See Vedder, Ritchie & Heister)..... (Design)	
	Ritchie, Francis, and Nicholas S. Vedder. (See Vedder & Ritchie)..... (Two cases.)	
108,832	Ritchie, John and George, England. Tent and umbrella.....	Nov. 1, 1870
100,672	Ritchie, William, Wilmington, Ill. Instrument for drawing geometrical lines.....	Feb. 23, 1870
99,238	Riter, John L., Liberty, Ind. Grain-drill feed.....	Jan. 25, 1870
108,294	Same..... Brownsville, Ind. Grain-drill.....	Oct. 11, 1870
109,054	Rittenhouse, Alvah, Philadelphia, Pa. Lamp-heating apparatus.....	Nov. 8, 1870
103,930	Rittenhouse, Daniel G., Shelby Depot, Tenn. Cotton-scraper.....	June 7, 1870
104,355	Rittenhouse, John B., and Joseph Collins, Locust Lane, Pa. Railway-gate.....	June 14, 1870
	Ritter, Andrew J., Rahway, N. J. Carriage-spring..... (Disclaimer filed)	Nov. 15, 1870
	Ritter, John, et al. (See Raible, Reis & Ritter.)	
99,478	Ritter, S. S., Philadelphia, Pa. Shoulder-brace.....	Feb. 1, 1870
106,508	Same..... Manufacture of truss-pads. (Antedated Aug. 10, 1870).....	Aug. 16, 1870
4,355	Rivers, Thomas L., Newark, N. J. Clamp for trunk-corners..... (Design)	Sept. 13, 1870
	Roach, John. (See Livingstone, William, assignor.)	
101,408	Roach, William H., Harrisonville, Ohio. Washing-machine.....	Mar. 29, 1870
99,595	Robb, John, New York, N. Y. Mode of splitting rock.....	Feb. 8, 1870
109,454	Robb, William, 2d, South Stoddard, N. H. Apple-paring machine.....	Nov. 22, 1870
	Robbins, Charles. (See Witte, William F., assignor.)	
99,479	Robbins, Edwin, England. Decorative slab formed from plastic material.....	Feb. 1, 1870
99,003	Robbins, Henry R., Baltimore, Md. Pipe-coupling for heating cars. (Antedated Jan. 8, 1870).....	Jan. 18, 1870
404,771	Same..... Stove and furniture leg.....	June 28, 1870
106,633	Same..... Wash-boiler.....	Aug. 23, 1870
102,971	Robbins, Hiram, assignor to self and William R. Morris, Cincinnati, Ohio. Roller-skate.....	May 10, 1870
99,950	Robbins, Horace T., Boston, Mass. Umbrella.....	Feb. 15, 1870
107,105	Same..... Apparatus for lighting gas by electricity.....	Sept. 6, 1870
100,327	Robbins, Louis S., New York, N. Y. Disinfecting compound.....	Mar. 1, 1870
108,056	Robbins, Moses M., Centreville, Ind. Field-roller and furrowing-machine.....	Oct. 4, 1870
109,346	Robbins, Richard B., Adrian, Mich. Wood and coal dumper for railways.....	Nov. 15, 1870
	Robbins, R. B. (See Mason, Austin Z., assignor.)	
100,328	Roberge, D., Moer's Forks, N. Y. Horseshoe.....	Mar. 1, 1870
100,329	Same..... same.....	Mar. 1, 1870
98,601	Roberts, A. E., Des Moines, Iowa. School desk.....	Jan. 11, 1870
107,724	Same..... Hinge for school-desks.....	Sept. 27, 1870
108,939	Roberts, Albert F., Lexington, Ky. Subsoil-attachment for plows.....	Nov. 1, 1870
105,850	Roberts, Andrew J., Boston, Mass. Cabinet-bedstead.....	July 26, 1870
3,951	Roberts, Benjamin S., U. S. Army. Breech-loading fire-arm. (Division 1, reissue)	May 3, 1870
3,952	Same..... same..... (Division 2, reissue)	May 3, 1870
3,953	Same..... same..... (Division 3, reissue)	May 3, 1870
109,145	Roberts, Benjamin S., assignor to O. B. North & Co., New Haven, Conn. Bit for harness.....	Nov. 8, 1870
102,713	Roberts, Charles Hamilton, Geneva, Ohio. School-desk.....	May 3, 1870
101,917	Roberts, Charles Henry, Evansville, Ind. Grinding-mill.....	April 12, 1870
98,885	Roberts, Cyrus, Three Rivers, Mich. Universal joint for shafting.....	Jan. 18, 1870
99,951	Roberts, Cyrus, and John A. Throp, Three Rivers, Mich. Horse-power.....	Feb. 15, 1870
	Roberts, Cyrus, Three Rivers, Mich., and John Cox, New Hope, Pa. Grain-separator..... (Extension)	Mar. 14, 1870
100,557	Roberts, Edmund D., Hartford, Conn. Stove-pipe drum.....	Mar. 8, 1870
103,082	Roberts, Edwin B., and William Graham, Sturgis, Mich. Transplanting-impliment.....	May 17, 1870
101,043	Roberts, Francis A., North Vassalborough, Maine. Tail-holder for horses.....	Mar. 22, 1870
105,128	Roberts, Franklin, assignor to New Orleans Pneumatic Propelling Company, New Orleans, La. Tank for holding compressed air.....	July 5, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,667	Roberts, George W., assignor to self and John H. Graham, Wilmington, Del. Earth-closet .....	Nov. 29, 1870
98,886	Roberts, Henry K., and George E., Jefferson County, Ky. Corn planter and fertilizer .....	Jan. 18, 1870
99,710	Roberts, John, assignor to self, C. Hart Smith, and Levi L. Willcutt, Waltham, Mass. Machine for tarring paper for roofing, &c. ....	Feb. 8, 1870
109,251	Roberts, John W., Hartford City, Ind. Ditching-machine .....	Nov. 15, 1870
	Roberts, Jonathan. (See Thresh, George, assignor.)	
101,513	Roberts, Lavan D., Cleveland, Ohio. Machine for making horseshoes .....	April 5, 1870
99,952	Roberts, Robert J., New York, N. Y. Plated needle .....	Feb. 15, 1870
4,514	Same..... Show-case .....	Dec. 13, 1870
105,251	Roberts, Samuel D., and Montgomery Dingee, Brooklyn, N. Y. Dumb-horse velocipede .....	July 12, 1870
99,480	Roberts, Thomas, Lynn, Mass. Knife-cleaning machine. (Antedated Jan. 24, 1870) .....	Feb. 1, 1870
	Roberts, Thomas, and Jacob W. Hill. (See Hill & Roberts.)	
	Roberts, Thomas Elwood. (See Butterfield, William, assignor.)	
	Roberts, William A. (See Fontaine, Eugene, assignor.)	
99,953	Roberts, William H., Mauch Chunk, Pa. Steam-pumping engine .....	Feb. 15, 1870
100,449	Same..... Device for securing uniform motion in pumping-engines .....	Mar. 1, 1870
106,078	Robertson, James, Scotland. Motive-power engine .....	Aug. 2, 1870
401,044	Robertson, John A., Boston, Mass. Steam-protection for safes, vaults, &c. ....	Mar. 22, 1870
100,073	Robertson, John R., Syracuse, N. Y. Stove-shelf .....	Feb. 22, 1870
109,035	Robertson, John S., Scotland. Horseshoe .....	Nov. 8, 1870
3,864	Robertson, Louis F., Morrisania, N. Y. Compound for treating hides and skins. (Reissue) .....	Mar. 1, 1870
104,356	Same..... New York, N. Y. Composition to increase the friction between belts and pulleys .....	June 14, 1870
110,161	Same..... Compound for bating hides and skins. ....	Dec. 13, 1870
101,661	Robertson, Louis T., New York, N. Y. Tanning by infiltration .....	April 5, 1870
105,252	Robertson, Orris W., Milwaukee, Wis. Battery-insulator .....	July 12, 1870
103,373	Robertson, William D., San Francisco, Cal. Dredging-machine .....	May 24, 1870
	Robeson, Daniel S., and Silas B. Terry, jr. (See Terry, Silas B., assignor.) (Re-issue.)	
108,833	Robeson, Robert I. (See Asher, James R., assignor.)	
	Robeson, Robert I., and William Nash, Oskaloosa, Iowa. Combined cultivator and seeder .....	Nov. 1, 1870
98,636	Robin, Thomas, and Charles E. Burk, Sheboygan, Wis. Ship's rudder .....	Jan. 4, 1870
99,711	Robinet, James T., assignor to self, William Mahone, and Joseph P. Minetree, Petersburg, Va. Journal-box .....	Feb. 8, 1870
101,382	Robinson, Charles, Boston, Mass. Projectile for toy-pistols .....	Mar. 29, 1870
102,594	Same..... Ball toy-gun .....	May 3, 1870
4,050	Same..... Arrow-gun .....	May 17, 1870
107,545	Same..... Alley-board for ball-games .....	Sept. 20, 1870
	Robinson, Charles E. (See Page, William I., assignor.)	
110,591	Robinson, Daniel T., Boston, Mass. Lamp-wick .....	Dec. 27, 1870
101,313	Robinson, David S., Pittsburgh, Pa. Chimney-top .....	Mar. 29, 1870
107,546	Robinson, Duportal D., Niles, Mich. Wagon-tongue support .....	Sept. 20, 1870
105,726	Robinson, Edward B., Portland, Maine. Music-leaf turner .....	July 26, 1870
98,710	Robinson, E. H., Janesville, Wis. Ruling-device. (Antedated Jan. 3, 1870) .....	Jan. 11, 1870
100,553	Robinson, Edward J., Syracuse, N. Y. Window-shade holder .....	Mar. 8, 1870
101,045	Robinson, F. W., Richmond, Ind. Horse-power .....	Mar. 22, 1870
109,769	Robinson, Henry, and John Smith, England. Apparatus for dressing mill-stones. ....	Nov. 29, 1870
	Robinson, Hiram B. (See Wilder, Robert M., assignor) .....	
	Robinson, Isaac J., St. Johnsbury, Vt. Try-square and bevel .....	June 14, 1870
109,761	Robinson, James, assignor to George Scheer, Sedalia, Mo. Wagon-brake .....	Nov. 29, 1870
	Robinson, James H. (See Clarkson, Edward H., assignor.)	
	Robinson, James W., and William C. Stern. (See Stern & Robinson.)	
102,972	Robinson, Job, Lawrence, Kans. Washing-machine .....	May 10, 1870
106,209	Robinson, John and Samuel F., and Christopher C. Putnam, Skowhegan, Maine. Apparatus for tanning .....	Aug. 9, 1870
103,239	Robinson, John Edward, Boston, Mass. Sand and air chamber for tubular wells. ....	May 17, 1870
101,164	Robinson, John G., assignor to August Kessberger, Springfield, Ill. Hub-reamer .....	Mar. 22, 1870
105,727	Robinson, John K., Middlebury, Ohio. Match-stick .....	July 26, 1870
107,411	Robinson, Macedon J., Ashley, Ill. Horse hay-rake .....	Sept. 13, 1870
103,639	Robinson, Newton H., Owasso, Mich. Dovetailing-chisel .....	May 31, 1870
103,504	Robinson, Orville M., Upper Jay, N. Y. Breech-loading fire-arm .....	May 24, 1870
	Robinson, R. M., and Co. (See Helwig, Edward J., assignor.)	
104,064	Robinson, Samuel P., Canterbury, Conn. Door-hanger .....	June 7, 1870
4,090	Robinson, Thomas C., assignor to George H. Sanborn, Boston, Mass. Paper-cutting machine .....	Aug. 2, 1870
	Robinson, Thomas L., and Charles M. Powers. (See Powers & Robinson.)	
100,450	Robinson, William, Spring Valley, N. Y. Lamp-shade. (Antedated Feb. 23, 1870) .....	Mar. 1, 1870
105,493	Robinson, William, Brooklyn, N. Y. Electro-magnetic gate and signal-apparatus for railroads .....	July 19, 1870
105,494	Same..... Electro-magnetic grate-operating apparatus. (Antedated July 8, 1870) .....	July 19, 1870
108,633	Same..... Electro-magnetic railroad-signal .....	Oct. 25, 1870
109,549	Same..... Electro-magnetic signaling-apparatus for railroad-crossings .....	Nov. 29, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,074	Robison, Horace A., Cleveland, Ohio. Weather-strip .....	Feb. 22, 1870
102,160	Robson, John H., Ovid, Mich. Machine for jointing the cleaning-teeth of cross-cut saws .....	April 19, 1870
103,451	Roch, Jules, Rochester, N. Y. Stay-brace for trunks .....	Mar. 1, 1870
103,374	Roche, Edward P., Bath, Me. Device for nebulizing perfumes and volatile liquids. (Antedated May 17, 1870) .....	May 24, 1870
105,851	Rock, Adolphe, New Orleans, La. Curing and preserving meat, &c .....	July 26, 1870
4,043	Rock, Edward A., assignor to the Rock Valve-Manufacturing Company, Ludlow, Vt. Globo steam-valve .....	June 21, 1870
103,660	Rock, Oliver, Hudson, Mass. Hammer .....	May 31, 1870
100,075	Rockhold, Charles W., Peoria, Ill. Sash-holder .....	Feb. 22, 1870
107,547	Rockwell, Andrew H., Harpersville, N. Y. Check-rein connector .....	Sept. 29, 1870
109,946	Rockwell, Ralph, and Zora B. Custer, Petroleum Centre, Pa. Scrubbing-brush .....	Dec. 6, 1870
3,865	Rockwood, Thomas J., St. Johnsbury, Vt. Machine for milling the knife-edges of scale-beams .....	Mar. 1, 1870
105,129	Rodda, Thomas, St. Louis, Mo. Reversing-valve for steam-engines .....	July 5, 1870
108,189	Rodeheaver, William H., Miamisburgh, Ohio. Machine for dressing fellos .....	Oct. 11, 1870
3,841	Rodgers, Amos C., assignor to self and Lewis Shaffer, Fort Washington, Pa. Railroad-station indicator .....	Feb. 15, 1870
101,165	Rodgers, Augusta M., Brooklyn, N. Y. Canopy for bedsteads .....	Mar. 22, 1870
105,253	Same. .... Folding-chair .....	July 12, 1870
3,969	Rodgers, Felix, Philadelphia, Pa. Shade for gas-lights, &c .....	April 12, 1870
4,018	Same. .... Shade for gas or lamp burners .....	May 10, 1870
102,161	Rodgers, John B., St. Louis, Mo. Compound to be used in treating rheumatism and other diseases. (Antedated April 12, 1870) .....	April 19, 1870
106,727	Rodier, Louis C., Springfield, Mass. Pumping-engine .....	Aug. 23, 1870
	Rodley, McAllister & Co. (See Maxim, Hiram S., assignor.)	
	Rodrigo, Frederick. (See Gruger, John P., assignor.)	
106,210	Roe, David E., Elmira, N. Y. Broiler .....	Aug. 9, 1870
108,634	Roe, Samuel, jr., Brownsville, Mo. Tire-machine .....	Oct. 25, 1870
4,318	Roebuck, Samuel and John, Brooklyn, N. Y. Cuspadore .....	Aug. 30, 1870
100,805	Roell, Frederick L., Northampton, Mass. Safety-attachment for pockets .....	Mar. 15, 1870
104,772	Roeper, John J., Philadelphia, Pa. Steam-heater .....	June 23, 1870
99,239	Rogan, James Woods, Memphis, Tenn. Cotton-bale tie .....	Jan. 25, 1870
104,650	Rogers, Charles, Allegheny City, Pa. Steam water-elevator .....	June 21, 1870
108,295	Rogers, Charles D., Utica, N. Y. Feeding-mechanism for wood-screw machinery .....	Oct. 11, 1870
	Rogers, Daniel G., et al. (See Powers, Thomas H., assignor.)	
104,357	Rogers, Edwin, Boston, Mass. Fire-alarm telegraph-apparatus .....	June 14, 1870
	Rogers, Ethan, Cleveland, Ohio. Hydraulic brick-press .....	Sept. 8, 1870
104,773	Rogers, Francis E., Paw Paw, Ill. Harvester-cutter .....	June 23, 1870
101,918	Rogers, Frederick O., Boston, Mass. Elevated and suspended garden .....	April 12, 1870
103,963	Rogers, George B., Boston, Mass. Stamp-canceler .....	Aug. 30, 1870
4,266	Rogers, Henry C., Sauquoit, N. Y. Trade-mark .....	July 26, 1870
100,452	Rogers, Hiram D., Cincinnati, Ohio. Ash box and sifter .....	Mar. 1, 1870
	Rogers, Hiram D., and William Smith. (See Smith & Rogers.)	
	Rogers, Homer, et al. (See Houghton, Moore & Rogers.)	
99,004	Rogers, John, Rogersville, Pa. Water-wheel .....	Jan. 13, 1870
3,843	Rogers, John, New York, N. Y. Group of statuary .....	Feb. 8, 1870
4,237	Same. .... same .....	Aug. 9, 1870
4,487	Same. .... same .....	Nov. 22, 1870
105,254	Rogers, John, and Lawrence Reid, Brooklyn, N. Y. Refining sugar .....	July 12, 1870
108,940	Rogers, John, assignor to Lippiatt Silver-Plate and Engraving Company, Newark, N. J. Finishing the surface of plated goods .....	Nov. 1, 1870
105,255	Rogers, John G., Dowagiac, Mich. Pruning-shears .....	July 12, 1870
4,529	Rogers, John K., Brookline, Mass. Type .....	Dec. 20, 1870
4,530	Same. .... same .....	Dec. 20, 1870
107,725	Rogers, Joseph, Detroit, Mich. Tuyere .....	Sept. 27, 1870
101,919	Rogers, Joseph A., New Haven, Conn. Artificial horizon for sextants, &c .....	April 12, 1870
103,661	Rogers, Joseph G., Madison, Ind. Composition for preventing incrustation in steam-boilers .....	May 31, 1870
103,662	Same. .... Preventing incrustation in steam-boilers .....	May 31, 1870
98,711	Rogers, Luman, Pittsburgh, Pa. Hay-fork .....	Jan. 11, 1870
98,837	Same. .... Horse hay-fork .....	Jan. 18, 1870
100,330	Rogers, Seymour, Pittsburgh, Pa. Grapple .....	Mar. 1, 1870
109,668	Rogers, Simeon, and Edwin K. Sperry, Fleming, N. Y. Cloth-guiding attachment for sewing-machines. (Antedated Nov. 26, 1870) .....	Nov. 29, 1870
100,670	Rogers, Thomas E., Dexter, Me. Dye-vat .....	Mar. 8, 1870
103,931	Rogers, William H., Brooklyn, N. Y. Fuse-composition .....	June 7, 1870
107,548	Rohm, Hiram F., West Providence, Pa. Bee-hive .....	Sept. 20, 1870
107,628	Same. .... same .....	Sept. 20, 1870
104,207	Rohr, Charles M., Portland, Ore. Construction of cane-seat chairs .....	June 14, 1870
106,624	Rohrbacher, Frederick, and Ferdinand Hormann, assignors to Salmon B. Rowley, Philadelphia, Pa. Process of forming smooth tops on glass jars .....	Aug. 23, 1870
101,662	Rohrer, John S., Lancaster, Pa. Hitching-post .....	April 5, 1870
103,663	Roles, Ruffin, Cary, N. C. Plow .....	May 31, 1870
	Roller, Philip. (See Schwab, John, assignor.)	
103,240	Rollins, Edward B., Poland, N. Y. Machine for making files .....	May 17, 1870
103,841	Rollins, Samuel G., assignor to Wigg, Rollins & Co., Boston, Mass. Bar-mill. (Antedated Nov. 30, 1870) .....	Dec. 6, 1870
99,596	Rollins, Thomas H., Detroit, Mich. Saw-frame .....	Feb. 8, 1870
	Romans, Joseph H., et al. (See Simpson, Gray & Romans.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,372	Rominger, Frederick, and John R. Davis. ( <i>See Davis &amp; Rominger.</i> ) Roman, Jeremiah F., jr., Boston, Mass. Wrench.....	July 12, 1870
	Rood, James, <i>et al.</i> ( <i>See Allen, Record, Rood &amp; Hayden.</i> ) Roome, Henry C., and Edwin Holmes. ( <i>See Holmes &amp; Roome.</i> ) Rooney, Thomas F. ( <i>See Doubler, John W. H., assignor.</i> )	
110,162	Roorbach, Charles L., St. Clair, Pa. Implement for removing corns, bunions, &c.	Dec. 13, 1870
110,289	Root, Charles F., West Springfield, Mass. Injector.....	Dec. 20, 1870
103,083	Root, Francis H., Buffalo, N. Y. Cooking-stove. (Antedated April 10, 1870)....	May 17, 1870
	Root, Francis H., and Sherman S. Jewett. ( <i>See Jewett &amp; Root.</i> ) Root, Franklin, Chelsea, Mass. Curtain-fixture. (Antedated May 9, 1870).....	May 17, 1870
106,211	Same.....Hartford, Conn. Curtain-fixture.....	Aug. 9, 1870
108,190	Same.....same. (Antedated Sept. 30, 1870).....	Oct. 11, 1870
100,192	Root, H. S., Muncy, Pa. Car-coupling.....	Feb. 22, 1870
106,728	Root, John, Hartland, N. Y. Cultivator.....	Aug. 23, 1870
100,928	Root, John, assignor to self and McLagon & Stevens, New Haven, Conn. Machine for heading bolts.....	Mar. 15, 1870
100,806	Root, John, assignor to self and Andrew Martin, New Haven, Conn. Paper-box.....	Mar. 15, 1870
103,932	Same.....same.....	June 7, 1870
98,802	Root, John B., New York, N. Y. Steam-generator. (Antedated Nov. 24, 1869)...	Jan. 11, 1870
4,082	Root, John B., assignor of part interest to Thomas C. Paton, New York, N. Y. Steam-generator..... (Division A, reissue)...	July 26, 1870
4,093	Same.....same..... (Division B, reissue)...	July 26, 1870
103,519	Roots, Philander H. and Francis M., Connersville, Ind. Construction, jointly, of fire-beds and tuyeres.....	Oct. 18, 1870
103,941	Same.....Portable forge.....	Nov. 1, 1870
	Same.....( <i>See Hardy &amp; Wood, assignors.</i> ) Rosbrugh, Amanda M., Panora, Iowa. Bleaching straw-goods.....	May 10, 1870
102,868	Roschdiantzky, F., and William Reichenbach. ( <i>See Reichenbach &amp; Roschdiantzky.</i> )	
107,814	Rose, Bennett R., Kansas City, Mo. Car-coupling.....	Sept. 27, 1870
	Rose, Buckley A. ( <i>See Banta, William E., assignor.</i> ) Rose, George P., Elmira, N. Y. Railway-rail splice.....	April 19, 1870
102,043	Rose, Israel M., Brook Haven, Mass. Sewing-machine needle for embroidering.	May 31, 1870
103,664	Rose, John H., and Sylvester J. Tucker. ( <i>See Tucker &amp; Rose.</i> ) Rose, John R., and Edward Caleby, assignors to Samuel Budd Sexton, Philadelphia, Pa. Screen for fire-places..... (Design)...	May 24, 1870
4,425	Same.....Fire-place stove..... (Design)...	Oct. 18, 1870
4,515	Rose, John R., and Edward L. Caleby, assignors to Armstrong Company, Philadelphia, Pa. Cooking-stove..... (Design)...	Dec. 13, 1870
	Rose, J. T. ( <i>See Ogden, Floyd, assignor.</i> ) Rose, Oliver H. P., East Greenwich, R. I. Bottle..... (Design)...	June 21, 1870
4,170	Rose, Philip H., and Miller B. Hudson, Canandaigua, N. Y. Stove-pipe thimble.....	April 19, 1870
102,044	Rose, Rufus E., and Amos Morrison. ( <i>See Morrison &amp; Rose.</i> ) Rose, Salomon, and Nathan Goldsmith, Cincinnati, Ohio. Insect-powder ejector.	Nov. 9, 1870
109,762	Rose, Thomas, and Robert Emerson Gibson, England. Engine for separating fiber from husks of cotton-seed.....	July 26, 1870
105,728	Same.....Process for separating fiber from the husks in cotton-coated seats.....	July 26, 1870
101,920	Rosecrans, Josiah, assignor to Adelia R. Swartz, Berkshire, Ohio. Lifting-jack.	April 12, 1870
108,296	Rosecrans, Leander W., Marshalltown, Iowa. Miter-machine.....	Oct. 11, 1870
	Rosencrantz, John. ( <i>See Follansbee, George Storrs, assignor.</i> ) (Two cases.) Rosenfield, Anthony. ( <i>See Lloyd, George A., assignor.</i> ) (Two cases.)	
106,409	Rosenkranz, John, Boston, Mass. Pouncing-machine.....	Aug. 16, 1870
107,962	Rosenstein, Moritz, Boston, Mass. Manufacture of ice.....	Oct. 4, 1870
105,226	Rosenthal, Günther F. C., Philadelphia, Pa. Children's carriage.....	Aug. 9, 1870
101,166	Rosochacki, Richard, Cleveland, Ohio. Apparatus for pitching barrels.....	Mar. 22, 1870
109,347	Ross, Alexander, and John Arthur, Freeport, Ill. Railway-car bumper and draw-head.....	Nov. 15, 1870
	Ross, A. Q., and S. G. Cabell. ( <i>See Cabell &amp; Ross.</i> ) Ross, Enoch, Washington, Iowa. Potato-digger.....	April 12, 1870
101,921	Ross, Herry S., Millville, Ohio. Vise for holding saws while being sharpened ..	Jan. 11, 1870
98,903	Same.....Cultivator.....	April 19, 1870
102,045	Ross, James, North Cambridge, Mass. Oil-cup.....	May 10, 1870
102,973	Ross, John, San Francisco, Cal. Boat-detaching apparatus.....	Feb. 22, 1870
100,193	Ross, John D., and Martin K. Burk, Truckee, Cal. Vehicle.....	Dec. 20, 1870
110,396	Ross, John D., Truckee, Cal. Wheel for vehicles.....	June 14, 1870
104,208	Ross, John E., Greensborough, Ga. Combined cotton-planter and guano-distributor.....	Dec. 20, 1870
110,592	Ross, Luther, Worcester, Mass. Lawn-mower.....	Dec. 27, 1870
100,076	Ross, Rice Farrar, Marshall County, Miss. Churn.....	Feb. 22, 1870
101,046	Ross, Robert, assignor to self, Wyatt W. Pierce, and George Ross, Middlebury, Vt. Casting metal.....	Mar. 22, 1870
	Ross, Samuel P. ( <i>See Bowles, John, assignor.</i> ) (Reissue.) Ross, Thomas, and William W. Graham, Rutland, Vt. Take-up nut.....	Nov. 15, 1870
109,348	Ross, William Frazier, Davenport, Iowa. Heating-stove.....	Feb. 15, 1870
99,954	Same.....Ventilator.....	Nov. 8, 1870
109,056	Rosser, William H., and James Stiver, Mill Hall, Pa. Feed-cutter.....	Feb. 1, 1870
99,352	Rossetter, William, and Colin Mather. ( <i>See Mather &amp; Rossetter.</i> ) Rossiter, Thomas P., Cold Spring, N. Y. Base-burning cooking-stove.....	Sept. 20, 1870
107,629	Rossmann, William F., Hudson, N. J. Stove-pipe damper.....	Aug. 16, 1870
106,410	Rosswog, Constantin, administrator. ( <i>See Schutzenbach, Sebastian, assignor.</i> )	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,922	Roth, John G., New York, N. Y. Clothes-wringer .....	April 12, 1870
98,712	Rothe, Julius Augustus, Philadelphia, Pa. Mode of treating vegetables to obtain fiber for paper, &c. ....	Jan. 11, 1870
103,505	Rotig, Frederic, France. Stop-watch .....	May 24, 1870
	Rouse, Roswell R. (See Hanning, John G., assignor.) .....	
107,412	Rouse, Wanton, Taunton, Mass. Operating the picker-staff in looms .....	Sept. 13, 1870
99,712	Roux, Benoit, assignor to M. Greenwood & Co., Cincinnati, Ohio. Casting auger gate hinge .....	Feb. 8, 1870
3,844	Same.....Pair of gate-hinges.....(Design).....	Feb. 8, 1870
109,455	Row, George, Indiana, Pa. Lightning-rod .....	Nov. 22, 1870
4,373	Rowe, Alonzo H., Newburyport, Mass. Punch-drawer .....	Sept. 27, 1870
106,212	Rowe, Ebenezer, Rockport, Mass. Apparatus for cooling the rollers used in the manufacture of isinglass .....	Aug. 9, 1870
101,663	Rowe, Elias, Vandalia, Ill. Vehicle .....	April 5, 1870
	Rowe, John, jr., and Benjamin F. Wright. (See Wright & Rowe.) .....	
102,323	Rowe, Martin A., Martinsville, Ill. Crank-motion .....	April 26, 1870
101,923	Rowe, Nathaniel, Emmittsburg, Md. Water-heating attachment for stove-pipes .....	April 12, 1870
104,065	Rowell, Benning, Byersville, N. Y. Fence .....	June 7, 1870
	Rowell, Calvin C., and William Duncan. (See Duncan & Rowell.) .....	
108,834	Rowell, Elijah G. and Alfonso D., James R. Rice, and Smith M. Seeley, Hartford, Wis. Shovel-plow and cultivator .....	Nov. 1, 1870
99,955	Rowell, Franklin, and E. C. Loud, Springfield, Mass. Pencil .....	Feb. 15, 1870
109,842	Rowell, Samuel, Amesbury, Mass. Carriage-axle and pole-yoke .....	Dec. 6, 1870
101,047	Rowell, Theodore, Beaver Dam, Wis. Shaft-coupling .....	Mar. 22, 1870
109,669	Rowland, James L., Milwaukee, Wis. Manufacture of artificial stone .....	Nov. 23, 1870
109,252	Rowland, Samuel, and Thomas C. Tipton, assignors to self and G. W. Wiggins, Williamsport, Ohio. Flood-gate .....	Nov. 15, 1870
100,559	Rowland, Thomas F., Green Point, N. Y. Gasometer .....	Mar. 8, 1870
	Rowland, W. B., and Otis W. Bean. (See Bean & Rowland.) .....	
	Rowles, Walter W. (See Russell, Albert J., assignor.) .....	
101,048	Rowley, John, assignor to the India Dye Company, (limited,) England. Treating coal products to obtain benzole, &c. (Patented in England July 22, 1869) .....	Mar. 22, 1870
109,057	Rowley, Martin Van Buren, Worcester, N. Y. Pump .....	Nov. 8, 1870
	Rowley, Salmon B. (See Rohrbacker & Hormann, assignors.) .....	
100,671	Same.....(See Otterson, Thomas Garrison, assignor).....(Reissue.) .....	
	Roy, Bozil S., Olneyville, R. I. Lubricating the traversing-guide in machines for feeding carding-engines .....	Mar. 8, 1870
110,501	Roy, John, New Orleans, La. Propelling-apparatus for cars .....	Dec. 27, 1870
99,597	Royal, Jarvis, White Rock, Ill. Suspension-bridge .....	Feb. 8, 1870
	Royce, Danforth H., et al. (See Lutz, Royce, Trenor & Chadwick.) .....	
101,664	Royer, Lewis, Royerton, Ind. Grain-separator .....	April 5, 1870
	Roys & Wilcox Company. (See Meigs, Edmund H., assignor.) .....	
100,929	Roys, Franklin, East Berlin, Conn. Machine for corrugating sheet-metal .....	Mar. 15, 1870
101,768	Royse, James D. and John, Cane Valley, Ky. Washing-machine .....	April 12, 1870
105,981	Rucker, George W., Oswald C. Swan, and Thomas W. Rucker, St. Louis, Mo. Machine for pressing and sheeting tobacco .....	Aug. 2, 1870
106,287	Rucker, James M., Forrest Depot, Va. Apparatus for forcing water .....	Aug. 9, 1870
	Rude, William, and Esau D. Taylor. (See Taylor & Rude.) .....	
107,726	Rudiger, Theodore H., Lawrence, Kans. Elevator .....	Sept. 27, 1870
106,872	Rudolf, Henry W., Louisville, Ky. Process for stencil-printing .....	Aug. 30, 1870
99,481	Rudolph, Bruno, Prussia. Sewing-machine for making gloves .....	Feb. 1, 1870
107,963	Rudolph, William H., Clarksville, Tenn. Device for spreading circular-saw teeth .....	Oct. 4, 1870
	Rueckenbag, Ludwig H. (See Stegmiller, Joseph, assignor.) .....	
102,974	Ruf, Carl, New York, N. Y. Funnel .....	May 10, 1870
106,509	Ruff, James H., Thomas Run, Md. Ironing-table .....	Aug. 16, 1870
3,823	Ruff, Joseph A., assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Door-e-cutcheon .....	Jan. 25, 1870
3,824	Same.....same.....(Design).....	Jan. 25, 1870
3,825	Same.....same.....(Design).....	Jan. 25, 1870
3,826	Same.....same.....(Design).....	Jan. 25, 1870
4,109	Ruff, Joseph A., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Bell-pull knob .....	June 7, 1870
	Same.....same.....	June 7, 1870
4,110	Same.....Bell-pull back-plate .....	June 7, 1870
4,111	Same.....same .....	June 7, 1870
4,112	Same.....Door-knob .....	June 7, 1870
4,113	Same.....same .....	June 7, 1870
4,114	Same.....same .....	June 7, 1870
4,115	Same.....same .....	June 7, 1870
4,116	Same.....same .....	June 7, 1870
4,117	Same.....same .....	June 7, 1870
4,118	Same.....same .....	June 7, 1870
4,119	Same.....Door-knob rose .....	June 7, 1870
4,120	Same.....Door-butt .....	June 7, 1870
4,121	Same.....Escutcheon .....	June 7, 1870
4,122	Same.....same .....	June 7, 1870
4,123	Same.....Door-latch .....	June 7, 1870
4,124	Same.....Shutter-knob .....	June 7, 1870
4,125	Same.....same .....	June 7, 1870
4,126	Same.....same .....	June 7, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name residence, and invention or discovery.	Date.
4,127	Ruff, Joseph A., assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Cambridge, Mass. Shutter-bar.....	June 7, 1870
4,128	Same..... Sash-lift.....	June 7, 1870
103,085	Rugg, William H. (See Reid, Archibald W., assignor.) Ruggles, Daniel, Fredericksburgh, Va. Composting manure and fertilizer..... Ruggles, Isaac D., et al. (See White, Alexander, assignor.) Ruhe, Charles, and H. Galmann. (See Galmann & Ruhe.) Rumery, Robert W. (See Patten, Alphonso, assignor.)	May 17, 1870
103,835	Rundell, Daniel J., South Westerlo, N. Y. Wagon-brake.....	Nov. 1, 1870
101,514	Runk, Jacob L., and Benjamin H. Tharp, Nashville, Ill. Fanning-mill.....	April 5, 1870
102,714	Runnells, William T. C., Searsport, Me. Washing-machine.....	May 3, 1870
106,238	Runyan, John S., Columbus, Ohio. Combined broiler and furnace.....	Aug. 9, 1870
109,550	Same..... Fire-place grate.....	Nov. 22, 1870
109,670	Rupp, John C., Newark, Del. Railway-frog.....	Nov. 29, 1870
105,130	Ruset, Charles F., Brooklyn, N. Y. Brush.....	July 5, 1870
105,131	Same..... Device for manufacturing brushes.....	July 5, 1870
105,373	Same..... Manufacture of brushes.....	July 12, 1870
	Rush, David G., et al. (See Wolff, Ludwig, assignor.)	
108,731	Rushworth, John, New York, N. Y. Machine for bundling wood.....	Oct. 25, 1870
110,397	Rusk, John H., Philadelphia, Pa. Grinding-mill. (Antedated Dec. 9, 1870).....	Dec. 20, 1870
104,358	Russ, James J., Worcester, Mass. Sofa-bed.....	June 14, 1870
	Russell & Erwin Manufacturing Company. (See Ruff, Joseph A., assignor.) (Twenty-four cases)..... (Design.) Same..... (See Parker, Emery, assignor)..... (Design.) Same..... (See Gorman, William, assignor)..... (Six cases.) (Design.) Same..... (See Fisher, Charles R., assignor)..... (Reissue.) Same..... (See Kunze, Charles, assignor)..... (Design.) Same..... (See Leger, Joseph L., assignor)..... (Design.) Same..... (See Kreuzinger, Ludwig, assignor)..... (Ten cases.) (Design.) Same..... (See Smith, John Joseph Charles, assignor)..... (Ten cases.) (Design.) Same..... (See Parker, Emery, assignor)..... (Two cases.) Same..... (See Elwell, Henry H., assignor)..... (Reissue.) Same..... (See Gorman, William, assignor.) Same..... (See Smith, Michael, assignor.)	
105,982	Russell, Albert, Newburyport, Mass. Windlass.....	Aug. 2, 1870
104,774	Russell, Albert J., assignor to self and Walter W. Rowles, Baltimore, Md. Invalid-bedstead. (Antedated June 16, 1870).....	June 23, 1870
103,086	Russell, Clement, and William K. Miller, Massillon, Ohio. Straw-carrier for thrashing-machines.....	May 17, 1870
102,436	Russell, James F., Washington, D. C. Button-shank gauge.....	April 26, 1870
99,482	Russell, James F., assignor to self, William Edelin, and Columbus Alexander, Washington, D. C. Lamp.....	Feb. 1, 1870
99,353	Russell, John, Prairie, Mo. Step-support for mill-spindles.....	Feb. 1, 1870
102,046	Russell, John, and Theodore T. McGrath, Fentonville, Mich. Washing-machine and boiler.....	April 19, 1870
	Russell, John, and Samuel Deacon. (See Deacon & Russell.)	
99,005	Russell, John L., Prairie City, Iowa. Key-hole guard.....	Jan. 18, 1870
	Russell, John L., et al. (See West, Thomas J., assignor.) Russell, Martin, Jr., and John H. Goodfellow. (See Goodfellow & Russell.)	
3,816	Russell, N. C., Gloversville, N. Y. Treatment of leather..... (Reissue) ..	Feb. 1, 1870
99,483	Russell, P. B., Malone, N. Y. Wagon-jack.....	Feb. 1, 1870
105,729	Russell, Titus H., Northfield, Vt. Circular-saw mill. (Antedated Aug. 17, 1870).....	Aug. 23, 1870
	Russell, William D., and Peter T. Speer. (See Baxter, William, assignor.)	
104,066	Russell, William H., Brooklyn, N. Y. Screw-collar for lamps.....	June 7, 1870
104,651	Russell, William M., Cincinnati, Ohio, and Oscar S. Pease, Xenia, Ohio. Railway-car signal.....	June 21, 1870
109,253	Russell, William W., Malden, Mass. Paper-file.....	Nov. 15, 1870
103,191	Rust, John P., Peabody, Mass. Removing grease from waste leather.....	Oct. 11, 1870
102,671	Rust, Samuel, Jr., Cincinnati, Ohio. Cock for carbureters, &c.....	Nov. 29, 1870
102,047	Ruston, George, Freeport, Ill. Egg-packing.....	April 19, 1870
109,672	Ruth, William A., Wyoming, Del. Bee-hive.....	Nov. 29, 1870
	Ruthvin, John B. (See Middlebrook, Alexander, assignor.)	
102,595	Rutter, John, West Chester, Pa. Water-cooler.....	May 3, 1870
103,780	Rutter, Robinson, Vallejo, Cal. Nut-locking washer.....	May 31, 1870
	Rutter, William Forbes, and Charles Henry Forbes. (See Forbes & Rutter.)	
107,815	Ruttkay, Albert, New York, N. Y. Manufacture of asphaltic compositions for pavements, roads, &c.....	Sept. 27, 1870
109,254	Same..... Roofing-composition.....	Nov. 15, 1870
102,437	Ryals, Joseph, Terryville, Conn. Manufacture of shears.....	April 26, 1870
107,816	Ryan, Daniel E., St. Louis, Mo. Vapor-generating burner for stoves.....	Sept. 27, 1870
105,256	Ryan, James, Brooklyn, N. Y. Lamp-chimney cleaner.....	July 12, 1870
109,763	Ryan, Patrick S., Rutland, Vt. Milk-strainer.....	Nov. 29, 1870
104,775	Rydbeck, Sven, Red Wing, Minn. Breech-loading fire-arm.....	June 28, 1870
99,484	Ryder, A. V., New York, N. Y. Hasp for trunk-locks.....	Feb. 1, 1870
101,924	Ryder, Benjamin F., assignor to Sargent & Co., New York, N. Y. Caster for sewing-machines.....	April 12, 1870
105,257	Ryder, Henry, New Bedford, Mass. Candlestick.....	July 12, 1870
109,551	Rye, Emil, Denmark. Mode of producing lithographic copies from photographic negatives.....	Nov. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,665	Ryerson, William S., and George Stancliff, assignors to selves, Oliver T. McIntosh, Amos L. Tripp, and Charles Chambers, New York, N. Y. Boat-detaching apparatus	April 5, 1870
105,983	Ryerson, William S., George Stancliff, and Oliver T. McIntosh, assignors to selves, Stephen G. Tripp, and Charles Chambers, New York, N. Y. Boat-detaching apparatus	Aug. 2, 1870
102,596	Rymel, George, Paris, Ky. Hemp-break	May 3, 1870
104,888	Sabatton, Frederick A., <i>et al.</i> (See Sharp, Ainsworth & Sabatton.)	
99,713	Sabin, Ira A., Locust Lane, Pa. Steam road-vehicle	June 28, 1870
	Sabins, Philander G., assignor to self and William H. Pierce, Westport, Mass. Fish-net	Feb. 8, 1870
99,006	Sach, Charles, Grand Rapids, Mich. Lumber-rack	Jan. 18, 1870
108,520	Sackermann, William, New York, N. Y. Brooch-fastening	Oct. 18, 1870
108,521	Sacre, Charles, Stanhope Perkins, and William Smellie, Great Britain. Manufacture of wrought iron	Oct. 18, 1870
108,522	Safety, Robert, Cohoes, N. Y. Stop-valve. (Antedated Oct. 15, 1870)	Oct. 18, 1870
106,873	Safford, George B., Burlington, Vt. Treadle-motion	Aug. 30, 1870
107,964	Safford, Henry W., New York, N. Y. Hand-stamp	Oct. 4, 1870
105,852	Safford, James Billings, San Francisco, Cal. Tuck-creasing attachment for sewing-machines	July 26, 1870
98,888	Safford, Joseph A., Winchester, Mass. Leather-splitting and fleshing machine	Jan. 18, 1870
98,889	Same. Rolling leather	Jan. 18, 1870
109,764	Sage, Clinton H., and Samuel B. Alger, Norwich, N. Y. Excavator	Nov. 29, 1870
	Sage, Clinton H., <i>et al.</i> (See Jerome, Alger & Sage.)	
100,453	Sage, D. C., Middletown, Conn. Blind-hinge	Mar. 1, 1870
104,359	Same. Hinge for blinds	June 14, 1870
	Same. (See Cooke, James C., assignor.)	
108,297	Saggan, Henry, Newark, N. J. Churn	Oct. 11, 1870
99,240	Saiger, Jacob F., Shelby, Ohio. Preserving butter	Jan. 25, 1870
98,713	Saladee, Cyrus W., Circleville, Ohio. Sawing-machine	Jan. 11, 1870
106,411	Same. St. Catharine's, Canada. Farm-gate	Aug. 16, 1870
	Salisbury, Amos M. (See Welch, Hilyard, assignor.)	
102,869	Salisbury, Elmor J., assignor to self and George A. Brush, San Francisco, Cal. Preserving and hardening stone, bricks, &c	May 10, 1870
99,111	Salisbury, John, Scituate, R. I. Bobbin-holder. (Antedated Jan. 14, 1870)	Jan. 25, 1870
	Salisbury, John, and Benjamin Wilbur, Scituate, R. I. Stool and traveling-bag. (Antedated Oct. 26, 1870)	Nov. 8, 1870
	Salladey, Lemuel, and Adolph Brase. (See Brase & Salladey)....(Two cases.)	
	Salmon, Aaron G. (See Brown, Charles, assignor.)	
3,832	Salmon, Ira A., Boston, Mass. Dentists' tool-rack	Feb. 8, 1870
4,381	Salomons, Leopold, assignor to J. W. and K. Chisholm, England. Medallion or cameo	Oct. 4, 1870
	Same. (Design)	Nov. 29, 1870
109,673	Salter, James, Williamsburgh, N. Y. Propeller	
	Sample, John J., <i>et al.</i> (See Wiedman, Major & Sample.)	
104,500	Sampson, Benjamin F., Brookfield, Mass. Turbine water-wheel	June 21, 1870
	Sanpison, Edward C. (See Meyer, Charles T., assignor.) (Sixteen cases.) (Design.)	
	Same. (See Meyer, Victor, assignor) (Design.)	
	Same. (See Meyer, Victor and Charles T., assignors) (Design.)	
103,087	Sampson, George O., Jamestown, N. Y. Steam-generator	May 17, 1870
	Sampson, Matthew B., and Joseph Dixon. (See Dixon & Sampson.)	
109,059	Sampson, Thomas, Providence, R. I. Dye-tub	Nov. 8, 1870
4,158	Samuels, John L., assignor of part interest to Benjamin F. Josselyn, William B. Lake, George G. Burnett, Henry S. Dent, Mary A. Stirling, George W. Dent, Joel S. Josselyn, Benjamin R. Nickerson, Frederick T. Dent, and Henry J. Stone, San Francisco, Cal. Preserving and hardening wood (Reissue)	Oct. 18, 1870
98,637	Sanborn, Charles W., Morrill, Maine. Horse hay-rake	Jan. 4, 1870
105,001	Sanborn, D. A., Brooklyn, N. Y. Penman's hand-support. (Antedated June 30, 1870)	July 5, 1870
	Sanborn, Ebenezer. (See Edwards, Eben, assignor.)	
	Sanborn, George H. (See Robinson, Thomas C., assignor) (Reissue.)	
	Sanborn, George H. and Joseph S. (See Sweetland, Frederick B., assignor.)	
109,843	Sanborn, George W., Gilmanton, N. H. Wagon-brake	Dec. 6, 1870
100,560	Sanborn, George W., assignor to Jeremiah W. Sanborn, Gilmanton, N. H. Sled-brake	Mar. 8, 1870
107,549	Sanborn, Thomas P., Boston, Mass. Organ-tremulant	Sept. 20, 1870
108,523	Sanborn, William W., assignor to self and Arthur A. Sanborn, Lewiston, Me. Dyeing woolen goods	Oct. 18, 1870
101,925	Sandbach, Thomas, and Joseph W. Fowler, South Bend, Ind. Well-borer	April 12, 1870
101,314	Sanders, Benjamin D., Wellsburgh, W. Va. Composition roofing	Mar. 29, 1870
101,315	Same. Machine for compressing wood tenons	Mar. 29, 1870
104,889	Sanders, David, assignor to self and J. D. Pierce, Milwaukee, Wis. Stove-pipe damper	June 28, 1870
101,515	Sanders, Henry, Utica, N. Y. Horse-collar	April 5, 1870
110,074	Same. Leather for neck-yokes for carriages	Dec. 13, 1870
104,501	Sanders, Sidney, Springfield, Mass. Steam-radiator. (Antedated Feb. 21, 1870)	June 21, 1870
	Same. (See Crossman, Charles P., assignor) (Design.)	
	Sanderson, Robert B. (See Schachtel, George A., assignor) (Design.)	
99,241	Sanderson, William, and James J. De Barry, New York, N. Y. Manufacture of door-knobs, umbrella-handles, and other molded articles	Jan. 25, 1870
99,242	Same. Handle for knives, forks, &c	Jan. 25, 1870
106,412	Sandford, Elijah W., Brooklyn, N. Y. Railway-car brake	Aug. 16, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,844	Sandford, Thomas Albert. ( <i>See Haines, W. H., assignor.</i> ) Sandham, Frederick, Montreal, Canada. Machine for stamping, pressing, and pointing horseshoe-nails.	Dec. 6, 1870
105,495	Sands, Joseph W., Annapolis, Md. Oyster-tongs.	July 19, 1870
105,984	Sanford, Addison V., Union Centre, N. Y. Adjustable railway-truck.	Aug. 2, 1870
99,243	Sanford, Clark S., Lena, Ill. Neck-yoke.	Jan. 25, 1870
4,452	Sanford, Gelston, Bergen, N. J. Cylinder and frame for steam-engines. (Design.)	Nov. 1, 1870
	Sanford, James T. ( <i>See Ladd, Calvin P., assignor.</i> )	
	Sanford, James T. and George W. ( <i>See Goodwin, William F., assignor.</i> )	
102,048	Sanford, Joseph Henry, assignor to Chandler Sprague, North Bridgewater, Mass. Shoemakers' edge-plane	April 19, 1870
	Sanford, Richard K. ( <i>See Baker, Horace, assignor.</i> ) (Reissue.)	
100,454	Sangster, Hugh, Buffalo, N. Y. Milk-can. (Antedated Feb. 28, 1870).	Mar. 1, 1870
101,516	Same. Tin-pail.	April 5, 1870
4,178	Sangster, James, Buffalo, N. Y. Brick-machine. (Division A, reissue.)	Nov. 15, 1870
4,179	Same. same. (Division B, reissue.)	Nov. 15, 1870
	Sangster, James, and David P. Dobbins. ( <i>See Dobbins &amp; Sangster.</i> )	
	Sangster, William H., and Horatio Wilkins. ( <i>See Wilkins &amp; Sangster.</i> )	
106,079	Sapp, Joseph R., Danville, Ohio. Churn	Aug. 2, 1870
	Sapp, Leo W., and William F. Class. ( <i>See Class &amp; Sapp.</i> )	
102,438	Sapp, William I., assignor to B. M. Rhodes & Co., Baltimore, Md. Manufacture of fertilizers	April 26, 1870
	Sargent & Co. ( <i>See Ryder, Benjamin F., assignor.</i> )	
	Same. ( <i>See Sparks, William E., assignor.</i> ) (Three cases.)	
	Same. ( <i>See Brocksieper, Frederick W., assignor.</i> ) (Six cases.) (Design.)	
	Same. ( <i>See McArthur, Duncan, assignor.</i> )	
	Same. ( <i>See Fogelstrand, Ferdinand, assignor.</i> ) (Two cases.) (Design.)	
103,506	Sargent, Charles G., Graniteville, Mass. Machine for washing and dyeing fibrous material	May 24, 1870
100,455	Sargent, Edward Levi, Watertown, N. Y. Breech-loading fire-arm.	Mar. 1, 1870
104,502	Same. same.	June 21, 1870
109,255	Same. same.	Nov. 15, 1870
98,622	Sargent, James, Rochester, N. Y. Permutation-lock.	Jan. 4, 1870
98,623	Same. Lock and bolt spindle.	Jan. 4, 1870
98,714	Same. Construction of safes, vaults, or doors	Jan. 11, 1870
101,383	Sargent, James F., Tunbridge, Vt. Traveling-cap.	Mar. 29, 1870
100,194	Sargent, Joseph B., New Haven, Conn. Wardrobe-hook.	Feb. 22, 1870
103,781	Same. Lock for traveling-bags	May 31, 1870
103,782	Same. Sewing-machine caster	May 31, 1870
195,374	Same. Furniture-caster	July 12, 1870
106,510	Same. Grindstone-journal box.	Aug. 16, 1870
100,195	Sargent, Zebadiah, Rochester, N. H. Lock.	Feb. 22, 1870
100,807	Saroni, Herrman S., Baltimore, Md. Vapor-burner for cooking or heating.	Mar. 15, 1870
	Sartor, Nicholas, and Joseph Hanauer. ( <i>See Hanauer &amp; Sartor.</i> )	
4,116	Sarven, James D., New Haven, Conn. Carriage-wheel. (Reissue.)	Sept. 6, 1870
103,088	Sasher, Thomas J., and J. Ham Davison. ( <i>See Davison &amp; Sasher.</i> ) Sattazahn, John, jr., Pine Grove Township, Pa. Grubbing-implement. (Antedated May 10, 1870)	May 17, 1870
99,112	Sattler, David, Mifflin, Ohio. Field-fence.	Jan. 25, 1870
106,213	Sauer, Arthur and Gustave, and Leonce Cachal, France. Liquid for raising paste and dough	Aug. 9, 1870
110,291	Sauer, Frank, and John Coerver, Waterloo, Ill. Fanning-mill.	Dec. 20, 1870
103,456	Sauerbier, Henry, Newark, N. J. Fluting-machine.	Nov. 22, 1870
103,730	Saul, Sarah E., Brooklyn, N. Y. Life-preserving skirt. (Antedated July 14, 1870).	July 26, 1870
	Saul, William, and Daniel Campbell. ( <i>See Campbell &amp; Saul.</i> )	
107,630	Saulpaugh, Thomas, Rock Island, Ill. Derrick-boat.	Sept. 20, 1870
	Saunders, David, and Joseph Nason. ( <i>See Nason &amp; Saunders.</i> )	
4,462	Saunders, Joseph H., Johnston, R. I. Picture-frame. (Design.)	Nov. 8, 1870
	Saunders, Phineas E., et al. ( <i>See Phelps, Augustus H., assignor.</i> )	
	Saunders, T. P., assignor. ( <i>See Holman, David O., assignor.</i> )	
	Saunders, William H., et al. ( <i>See Miner, Stevens &amp; Saunders.</i> ) (Extension.)	
106,080	Saurman, Thomas M., Norristown, Pa. Photographic-print cutting-apparatus.	Aug. 2, 1870
104,209	Sauter, Beneditt, Danbury, Conn. Refrigerator.	June 14, 1870
99,007	Savage, Elliot, West Meriden, Conn. Alloy of manganese.	Jan. 18, 1870
102,324	Savage, Elliot, assignor to self and Julius Hotchkiss, West Meriden, Conn. Manufacture of alloys of manganese	April 26, 1870
	Savage, J. B. ( <i>See Miller, Robert R., assignor.</i> ) (Three cases.)	
	Same. ( <i>See Cowles, Frederick A., assignor.</i> )	
	Same. ( <i>See Hull, Daniel H., assignor.</i> )	
101,517	Savage, Silas T., assignor to self and David S. Quimby, jr., Brooklyn, N. Y. Coffee-pot.	April 5, 1870
109,765	Savage, Walter G., Knoxville, Iowa. Steam-generator.	Nov. 29, 1870
106,511	Savary, George Thomas, Newburyport, Mass. Mortising-machine.	Aug. 10, 1870
4,274	Savery, Charles C., Philadelphia, Pa. Refrigerator and water-cooler. (Design.)	Aug. 2, 1870
4,498	Same. Water-cooler. (Design.)	Nov. 29, 1870
103,783	Sawtelle, Zephaniah E., assignor to self and Thomas N. Stowell, Boston, Mass. Pulley for window-sash.	May 31, 1870
104,776	Sawyer, Alvah C., Canton, N. Y. Ironing-machine.	June 28, 1870
	Sawyer, A. F., et al. ( <i>See Palmer, Charles H., assignor.</i> )	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
103,375	Sawyer, Charles B., assignor of one-half interest to John W. Labaree, Fitchburgh, Mass. Balance-elevator.....	May 24, 1870
109,766	Sawyer, Charles B., assignor through mesne assignments to William Pratt and Abby A. Williams, Fitchburgh, Mass. Manufacture of paper-pulp.....	Nov. 29, 1870
	Sawyer, Charles E., <i>et al.</i> (See Perkins, Moulton & Sawyer.)	
	Sawyer, Daniel, and Samuel Joseph Peet. (See Peet & Sawyer.)	
107,294	Sawyer, Eli, Madison, Iowa. Marking-attachment to corn-planters.....	Sept. 13, 1870
101,384	Sawyer, Enoch, Hollow Square, Ala. Mode of lubricating axles.....	Mar. 29, 1870
102,439	Sawyer, Joseph B., Templeton, Mass. Dropping-platform for harvesters.....	April 26, 1870
101,167	Sawyer, J. H., Boston, Mass., and C. Keniston, Somerville, Mass. Machine for burnishing boot and shoe heels.....	Mar. 22, 1870
106,730	Sawyer, Joseph W., assignor to F. Draper & Co., Boston, Mass. Binding-attachment for sewing-machines.....	Aug. 23, 1870
101,518	Sawyer, Leonard, South Amesbury, Mass. Carriage-prop.....	April 5, 1870
101,926	Sawyer, Nowell F., Haverhill, Mass. Feed-operating mechanism for sewing-machines.....	April 12, 1870
	Sawyer, Peter C. (See Smith, Calvin D., assignor.)	
	Sawyer, Wilson. (See Bryan, Norman, assignor.)..... (Two cases.)	
104,777	Sax, John K., Pittston, Pa. Mold for car-wheels.....	June 23, 1870
3,954	Sax, John K., and George W. Kear, Kingston, Pa. Railway-car wheel. (Reissue).....	May 3, 1870
106,874	Sayer, James F., Macomb, N. Y. Stave-jointer.....	Aug. 30, 1870
106,731	Saylor, Henry, St. Paris, Ohio. Fifth-wheel for carriages.....	Aug. 23, 1870
99,354	Sayles, Thomas, Chicago, Ill. Railway-car journal-lubricator.....	Feb. 1, 1870
107,631	Same..... Car-axle lubricator.....	Sept. 20, 1870
	Sayre, Edmund. (See Seal, William D., assignor.)	
102,162	Sayre, Samuel D., Rockford, Ill. Plow.....	April 19, 1870
	Scaife, Oliver P. (See Hill & Thumm, assignors)..... (Three cases.)	
4,224	Scaife, William B., Pittsburgh, Pa. Kitchen-boiler..... (Design).....	July 12, 1870
107,817	Same..... same.....	Sept. 27, 1870
103,524	Same..... same.....	Oct. 18, 1870
102,049	Scanlan, Charles A., Charleston, S. C. Dredging-apparatus.....	April 19, 1870
99,789	Scanlan, Patrick, Indianapolis, Ind. Oil-can.....	Feb. 15, 1870
103,552	Same..... Paper-machine.....	Nov. 22, 1870
101,316	Scantlin, Thomas, Evansville, Ind. Stove-drum.....	Mar. 29, 1870
102,050	Same..... Funnel can-filler.....	April 19, 1870
101,519	Searlett, William, Aurora, Ill. Sad-iron heater.....	April 5, 1870
102,325	Scatchard, Alfred, England. Apparatus for the manufacture of aerated bread.....	April 26, 1870
100,808	Scattergood, E. B., St. John's, Mich. Washing-machine. (Antedated March 11, 1870).....	Mar. 15, 1870
104,210	Scattergood, E. B., assignor to William H. Watts, St. John's, Mich. Gates.....	June 14, 1870
109,256	Schachtel, George A., assignor to self and Robert B. Sanderson, Newark, N. J. Extension-platform step-ladder.....	Nov. 15, 1870
105,258	Schaefer, Julius, and Gustav Schock, New York, N. Y. Faucet.....	July 12, 1870
105,132	Schaeffer, Carl, Elizabeth, N. J. Manufacture of artificial stone.....	July 5, 1870
	Schaeffer, Thomas H. (See Pampel, Frederick W., assignor.)	
	Schaeffler, William G., & Co. (See Bringman, George E., assignor.)	
99,598	Schaffer, George F., New York, N. Y. Dental articulator.....	Feb. 8, 1870
102,715	Schaffer, Oliver, Dayton, Ohio. Compound for refining cider, wine, &c.....	May 3, 1870
	Schaffner, William A., and John F. Martin. (See Martin & Schaffner.)	
	Schanck, Joseph C., <i>et al.</i> (See Dougherty, John B., assignor.)	
103,507	Schantl, Lewis, St. Louis, Mo. Coke-oven.....	May 24, 1870
106,875	Scharnikow, Edward, Margaretville, N. Y. Compound or "rough-stuff" to be applied to carriage-bodies, &c. (Antedated Aug. 19, 1870).....	Aug. 30, 1870
110,075	Schartau, Eilert O., Philadelphia, Pa. Machine for cutting cork. (Antedated Dec. 9, 1870).....	Dec. 13, 1870
110,076	Same..... Cork-machine.....	Dec. 13, 1870
106,732	Schatz, William F., Columbus, Ohio. Breeching-attachment for horses.....	Aug. 23, 1870
101,520	Schaub, John D., Birmingham, Pa. Cabbage-cutter.....	April 5, 1870
108,635	Scheel, Ernest, New York, N. Y. Writing-desk.....	Oct. 25, 1870
	Scheer, George. (See Robinson, James, assignor.)	
107,295	Scheff, Andrew, Raymondville, N. Y. Clothes-drier.....	Sept. 13, 1870
3,929	Scheffler, Theodore, Paterson, N. J. Machinery for making ice..... (Design).....	Mar. 22, 1870
99,008	Schenck, John B., Matteawan, N. Y. Planing-machine.....	Jan. 18, 1870
99,599	Same..... same.....	Feb. 8, 1870
99,600	Same..... Sawing-machine.....	Feb. 8, 1870
99,465	Schenck, Junius, Brooklyn, N. Y. Method of protecting the ends of vulcanized India-rubber or combination-hose.....	Feb. 1, 1870
3,842	Same..... Manufacture of hose, tubing, and other rubber fabrics. (Reissue).....	Feb. 15, 1870
	Schepler, John, and Samuel Stockton. (See Stockton & Schepler.)	
101,521	Scherb, Francis, New York, N. Y. Carriage-axle.....	April 5, 1870
	Schermerhorn, J. W., & Co. (See Munger, George, assignor.)	
	Schermerhorn, James W., and George Munger. (See Munger & Schermerhorn.)	
	Scherr, Ernilus Nicholas, jr. (See Haasz, Daniel F., assignor.)	
103,376	Scheuerle, Henry, New York, N. Y. Nail-machine. (Antedated May 13, 1870).....	May 24, 1870
102,051	Schevenell, Oswald, Marion, Ala. Cartridge-case.....	April 19, 1870
107,553	Scheydecker, Antoine, Amsterdam, N. Y. Clasp for elastic bands.....	Sept. 20, 1870
110,593	Schieck, Christian, New York, N. Y. Corset-fastening.....	Dec. 27, 1870
110,163	Schieder, John, New York, N. Y. Material for bearing-surfaces in machinery.....	Dec. 13, 1870
107,818	Schifferle, Fridolin, St. Louis, Mo. Sauce-pan.....	Sept. 27, 1870
102,256	Same..... Fountain-pen.....	Nov. 15, 1870
107,819	Schiffing, Albert F., Evansville, Ind. Spring-hinge for doors, &c.....	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
98,890	Schild, Henry, and F. Meyer. ( <i>See Meyer &amp; Schild.</i> )	
109,060	Schild, Henry, and George J. Prentice, assignors through mesne assignments to Lewis Prentice, New York, N. Y. Cigar-machine. (Antedated Jan. 10, 1870).	Jan. 18, 1870
106,512	Schilling, August M., Chicago, Ill. Scroll-saw.	Nov. 8, 1870
98,638	Schilling, Cornelius, New York, N. Y. Propelling-apparatus.	Aug. 16, 1870
	Schillinger, John J., New York, N. Y. Refrigerator for buildings. (Antedated Oct. 7, 1869).	Jan. 4, 1870
102,716	Same.....Cask for lager-beer.	May 3, 1870
104,360	Same.....Wall and floor for buildings.	June 14, 1870
105,599	Same.....Concrete pavement.	July 19, 1870
	Schleeter, Charles, and Friederich Wegner. ( <i>See Wegner &amp; Schleeter.</i> )	
108,732	Schleier, Theodore M., and Rudolph Knaffl. ( <i>See Knaffl &amp; Schleier.</i> )	
	Schleifer, Francis. Refining sugar by steam.	Oct. 25, 1870
99,956	Schlenker, Erhard, <i>et al.</i> ( <i>See Hyatt, Charles, assignor.</i> )	
	Schlesinger, A. D., assignor to the India-Rubber Comb Company, College Point, Long Island, N. Y. Coloring vulcanite or hard rubber.	Feb. 15, 1870
107,820	Schlickeysen, Carl Friedrich, Prussia. Stone-working machine.	Sept. 27, 1870
99,355	Schlueter, Gustave, Brooklyn, N. Y. Composition for molding plaster of Paris.	Feb. 1, 1870
100,672	Schmackers, Anton, assignor to Lane & Bodley, Cincinnati, Ohio. Mortising-machine.	Mar. 8, 1870
	Schmehl, S. S. ( <i>See Eck, J. L., assignor.</i> )	
109,674	Schmid, John B., Salem, Va. Dovetailing-machine.	Nov. 29, 1870
109,675	Same.....same.	Nov. 29, 1870
3,817	Schmidler, Peter A., <i>et al.</i> ( <i>See Doty, Little &amp; Schmidler.</i> )	
	Schmidlin, William G., and J. W. Driscoll, New York, N. Y. Reflector for lamps.	Feb. 1, 1870
101,769	Same.....Street-lamp.	April 12, 1870
3,981	Same.....Reflector.	May 17, 1870
	Schmidt, Augustus Theodore, and Frederick Braun. ( <i>See Braun &amp; Schmidt.</i> )	
108,636	Schmidt, Ernst. ( <i>See Ernst, Philipp M., assignor.</i> )	
100,809	Schmidt, John M., New Albany, Ind. Spring.	Oct. 25, 1870
103,784	Schmidt, Leonhard, Lancaster, Pa. Grater.	Mar. 15, 1870
100,930	Schmidt, Louis C. A., Tiffin, Ohio. Flour-bolting apparatus.	May 31, 1870
107,727	Schminke, Henry, Baltimore, Md. Vapor-burner.	Mar. 15, 1870
101,317	Schmitt, Anton, Cincinnati, Ohio. Horse-detaching device.	Sept. 27, 1870
	Schmitt, Caspar, St. Louis, Mo. Pessary.	Mar. 29, 1870
	Schmitt, John A. and Phillip L., <i>et al.</i> ( <i>See Braley &amp; Schmitt.</i> )	
98,523	Schmitt, Peter, and John Schuell. ( <i>See Schuell &amp; Schmitt.</i> )	
	Schmucker, John P., assignor to self and J. D. Willis, Ashland, Ohio. Permutation-lock.	Jan. 4, 1870
104,593	Schnebly, William, Hackensack, N. J. Thrashing-machine.	June 21, 1870
102,597	Schnee-kloth, Hans Asmus, New York, N. Y. Hoisting-apparatus.	May 3, 1870
102,163	Schneider, Bennett B., New York, N. Y. Lamp.	April 19, 1870
105,496	Schneider, Charles, Galion, Ohio. Hanging mill-stones.	July 19, 1870
	Schneider, Charles, and Louis Yenne. ( <i>See Yenne &amp; Schneider.</i> )	
101,049	Schneider, Jacob F., Brooklyn, N. Y. Skate.	Mar. 22, 1870
98,524	Schneider, William A., Albany, N. Y. Steam-trap.	Jan. 4, 1870
99,601	Schoch, William, Plumsteadville, Pa. Carriage-top.	Feb. 8, 1870
	Schock, Gustav, and Julius Schaefer. ( <i>See Schaefer &amp; Schock.</i> )	
101,318	Schock, J. James, and Anson N. Kellogg. ( <i>See Kellogg &amp; Schock.</i> )	
102,870	Schoenberg, Abraham, New York, N. Y. Mold for casting solder, &c.	Mar. 29, 1870
	Schofield, Charles, Kernville, Cal. Apparatus for saving gold.	May 10, 1870
104,211	Schofield, Charles, and Louis Heine. ( <i>See Heine &amp; Schofield.</i> )	
	Schofield, George W., U. S. Army. Breach-loading fire-arm.	June 14, 1870
	Schofield, John S. ( <i>See Wilcox, John W., assignor.</i> )	
105,259	Schofield, Silas C., Chicago, Ill. Coupling for tumbler-shafts.	July 12, 1870
106,214	Schofield, Socrates, assignor to self and Richard A. Bright, jr., Providence, R. I. Cigar-machine.	Aug. 9, 1870
100,673	Schoonover, John Q. A., assignor of one-half interest to James S. Totten, Lebanon, Ohio. Water-current motor.	Mar. 8, 1870
99,244	Schopf, Benjamin and Christian, Pittsburgh, Ind. Lifting-jack.	Jan. 25, 1870
103,665	Schopp, Philip Jacob, Louisville, Ky. Apparatus to effect the hydration of air in heated apartments.	May 31, 1870
104,212	Same.....Grate and fire-pot for heating stoves.	June 14, 1870
103,395	Same.....Apparatus for the support of skaters.	Oct. 18, 1870
103,376	Schott, Charles, assignor to self and James H. Bruce, Nashville, Tenn. Pencil-attachment for compasses.	July 12, 1870
	Schott, J. J. ( <i>See Byrne &amp; Strunk, assignors.</i> )	
103,508	Schou, Mathias, Englishtown, N. J. Jack for connecting poles and shafts to wagons.	May 24, 1870
105,093	Schrader, August, New York, N. Y. Ring for securing hose to couplings.	July 5, 1870
103,241	Schrag, Philip, and Philip Hufeland, New York, N. Y. Machine for cutting off lead-pencils.	May 17, 1870
4,531	Schraubstadter, Carl, Brookline, Mass. Type. (Design).	Dec. 20, 1870
101,779	Schreyer, Philipp, New York, N. Y. Money-safe.	April 12, 1870
109,533	Schriber, Thomas H., Evansville, Ind. Ejector.	Nov. 22, 1870
103,689	Schrier, William, Logansport, Ind. Composition-metal or alloy.	May 17, 1870
101,522	Schroeffel, John, and William Dell, Allegheny, Pa. Harrow and earth-cutter.	April 5, 1870
104,778	Schroyer, Joseph J., Springfield, Ill. Wood pavement.	June 28, 1870
102,717	Schryver, Henry, assignor to self and J. Deyo Chipp, Kingston, N. Y. Clothes-drier.	May 3, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,513	Schuckers, Jacob W., Philadelphia, Pa. Harvester-rake.....	Aug. 16, 1870
108,637	Schuell, John, and Peter Schmitt, Waterloo, Ill. Automatic fan.....	Oct. 25, 1870
	Schuellermann, John C., and Samuel Croft, executors. (See Liebrich, Conrad).....	
108,192	Schnette, Ernst A., New York, N. Y. Apparatus for water-proofing fabrics with gutta-percha.....	Oct. 11, 1870
101,666	Schnette, John B., Lockington, Ohio. Churn.....	April 5, 1870
108,836	Schuler, Peter, Morris, Ind. Breech-loading fire-arm.....	Nov. 1, 1870
	Schultheis, John, et al. (See Lutz, Schultheis & Florentin.).....	
100,561	Schultz, Carl, and Thomas Warker, New York, N. Y. Self-closing faucet. (Antedated Feb. 21, 1870).....	Mar. 8, 1870
101,771	Schultz, Henry, assignor to self and Henry C. Bentley, Milwaukee, Wis. Regulating device for gas-burners.....	April 12, 1870
109,947	Schultz, Hugo, France. Skirt.....	Dec. 6, 1870
	Schulz, Frederick and Victor. (See Farrington, George K., assignor.).....	
101,168	Schulze, G. F., Janesville, Wis. System of heating and ventilating.....	Mar. 22, 1870
106,081	Schulze, Louis, Louisville, Ky. Regulator for spirit-meters.....	Aug. 2, 1870
106,964	Same.....Apparatus for pitching barrels.....	Aug. 30, 1870
109,948	Same.....Baltimore, Md. Apparatus for pitching and coating barrels, casks, &c.....	Dec. 6, 1870
	Schurr, Christian L., and Louis G. Sert. (See Sert & Schurr.).....	
100,456	Schutt, Everett P., Cortland, N. Y. Gas and water pipe plug.....	Mar. 1, 1870
109,767	Schuyler, Josephus F., Tiffin, Ohio. Paper-trimming machine.....	Nov. 29, 1870
103,090	Schutzenbach, Sebastian, deceased, by Constantin Rosswog, administrator, New York, N. Y. Manufacture of sugar.....	May 17, 1870
	Schwab, Adam. (See Abel, Anthony, assignor.).....	
104,361	Schwab, John, assignor to self and Phillip Roller, Bridgeport, Conn. Blacking-brush and case.....	June 14, 1870
100,674	Schwartz, Henry, Fayetteville, Ohio. Stamp-extractor.....	Mar. 8, 1870
101,319	Schwartz, Theodore, New York, N. Y. Process of obtaining acetic acid from wood.....	Mar. 29, 1870
101,320	Same.....Treating wood to obtain useful products.....	Mar. 29, 1870
108,193	Schwerin, Morris, Newark, N. J. Caster for trunks.....	Oct. 11, 1870
101,523	Scobey, George V., assignor to self and Reuben Wood, Waterloo, N. Y. Skate.....	April 5, 1870
99,009	Scotfield, Minot S., Stamford, Conn. Hand-barrow.....	Jan. 18, 1870
110,502	Same.....Handle for barrels, &c.....	Dec. 27, 1870
107,821	Scoggins, Samuel R., Baltimore, Md. Refrigerator.....	Sept. 27, 1870
3,801	Scorer, Robert, Troy, N. Y. Cooking-stove.....	Jan. 18, 1870
	Scott, C. A., and R. T. Bradley. * (See Bradley & Wansbrough, assignors.).....	
	Scott, David, jr., and James Davis, jr. (See Davis & Scott.).....	
104,504	Scott, David A., assignor to Allen C. Richards, Cincinnati, Ohio. Spring bed-bottom.....	June 21, 1870
	Scott, David A., and Peter J. Rice. (See Rice & Scott.).....	
110,503	Scott, Erastus W., Wauregan, Conn. Whip-holder for carriages.....	Dec. 27, 1870
108,638	Scott, Francis B., assignor to self and C. S. S. Lennox, Lancaster, N. Y. Rein-holder.....	Oct. 25, 1870
104,213	Scott, Francis E., Centreville, Ind. Drain-tile.....	June 14, 1870
109,676	Scott, George, New Orleans, La. Elevator.....	Nov. 29, 1870
101,525	Scott, George, assignor to self, Charles, John, Charles H., George W., and William H. Melcher, Philadelphia, Pa. Brick and tile machine.....	April 5, 1870
	Scott, George S. (See Shepard, Charles U., jr., assignor.).....	
108,298	Scott, George W., Greencastle, Ind. Coal-vault grate.....	Oct. 11, 1870
	Same.....(See Feemster, John U. L., assignor.).....	
	Scott, George W., et al. (See Eaton, Ainsworth & Scott.).....	
105,002	Scott, Gustav A., and William B. Frisbee, San Francisco, Cal. Supplementary pedal-attachment for piano-fortes.....	July 5, 1870
	Scott, Harshaw. (See Evans & Gentsch, assignors).....	
	Same.....(See Bickford, Henry, assignor).....	
98,525	Scott, Jerome, Charlestown, Pa. Washing-machine.....	Jan. 4, 1870
106,876	Scott, John D., Alviso, Cal. Cattle-stanchion.....	Aug. 30, 1870
107,822	Scott, John William, Philadelphia, Pa. Extension-ladder.....	Sept. 27, 1870
103,377	Scott, Joseph, San Francisco, Cal. Amalgamator and ore-concentrator.....	May 24, 1870
109,061	Scott, Levi, Burgettstown, Pa. Churn-dasher.....	Nov. 8, 1870
103,666	Scott, Samuel A., Griffin, Ga. Seed-sower.....	May 31, 1870
98,844	Scott, W. B., New York, N. Y. Method of applying anti-friction rollers to wheels.....	Jan. 11, 1870
104,890	Scott, William Edmond, Knoxville, Tenn. Shelving for stores.....	June 28, 1870
	Scott, William G., et al. (See Shearon, Andrew, assignor.).....	
108,942	Scott, William M., England. Breech-loading fire-arm.....	Nov. 1, 1870
106,877	Scottron, Thomas C., and Sidney Plummer, Springfield, Mass. Composition for blacking stoves.....	Aug. 30, 1870
101,524	Scoville, Elijah U., Manlius, N. Y. Horse hay-fork.....	April 5, 1870
4,194	Scoville, Hiram H., assignor of one-half interest to Joseph A. Scoville, Oakland, Cal. Harvester rake.....	Dec. 6, 1870
110,292	Serannage, Matthew, Medford, Mass., and Wallace H. Bate, Somerville, Mass. Faucet.....	Dec. 20, 1870
103,734	Seranton, William E., New Haven, Conn. Curtain-fixture.....	Oct. 25, 1870
104,652	Scribner, George H., Natick, Mass. Manufacture of felt-hats.....	June 21, 1870
104,653	Scribner, George W., Detroit, Mich. Reed-organ.....	June 21, 1870
107,823	Scribner, Gilman A., Rochester, N. Y. Grain-binder.....	Sept. 27, 1870
109,949	Scripture, Eliphalet S., Brooklyn, E. D., N. Y. Wrench. (Antedated Nov. 25, 1870).....	Dec. 6, 1870
100,931	Scruton, Thomas C., Farmington, N. H. Catarrh remedy or snuff.....	Mar. 15, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Scudder, Adam L., and John L. Wager. ( <i>See Wager &amp; Scudder.</i> )	
	Scudder, George T. ( <i>See Webster, Albert G., assignor.</i> )	
100,810	Scudder, Henry B., Needham, Mass. Knitting-machine.	Mar. 15, 1870
106,215	Scully, William, assignor to the Michigan Bolt and Nut Company, Detroit, Mich. Nut-tapping machine.	Aug. 9, 1870
	Seal, John H., and William Ziegler. ( <i>See Ziegler &amp; Seal.</i> )	
104,362	Seal, William D., assignor to self and Edmund Sayre, Washington, D. C. Hydraulic air-compressing apparatus.	June 14, 1870
99,957	Seaman, John, New York, N. Y. Harness-hook.	Feb. 15, 1870
	Seaman, Robert. ( <i>See Shepard, Henry W., assignor.</i> ) (Reissue.)	
	Searl, Francis D., and Edward Hall. ( <i>See Hall &amp; Searl.</i> )	
	Searle, Calvin. ( <i>See Chandler, George W., assignor.</i> )	
	Searle, Henry, and Cyrus Eskrett. ( <i>See Eskrett &amp; Searle.</i> )	
98,805	Searle, J. Q. C., Topeka, Kans. Steam-boiler furnace.	Jan. 11, 1870
96,806	Same. Base-burning stove.	Jan. 11, 1870
105,260	Same. Railroad-car stove.	July 12, 1870
	Same. ( <i>See Svensson, Carl L., assignor.</i> )	
102,718	Searles, Andrew B., Providence, R. I. Tea and coffee strainer.	May 3, 1870
104,654	Searles, Irving W., Tiffin, Ohio. Clothes-pin.	June 21, 1870
108,057	Same. Land-roller.	Oct. 4, 1870
100,562	Searles, Samuel C., Wilmington, Del. Caulkers' mallet.	Mar. 8, 1870
105,985	Searls, Anson, Newark, N. J. Top-prop for carriages. (Antedated July 21, 1870)	Aug. 2, 1870
100,331	Sears, Brown, Cold Spring, N. Y. Coal-sifter.	Mar. 1, 1870
105,600	Sears, Delos A., Rockford, Ill. Gang-plow.	July 19, 1870
104,779	Sears, Henry, and Edmund B., Rockford, Ill. Knife for cutting sheaf-bands.	June 23, 1870
110,293	Sears, John, Cortland, N. Y. Spring for beds, sofas, &c.	Dec. 20, 1870
107,632	Sears, Samuel W., New York, N. Y. Grass-cutter.	Sept. 20, 1870
99,113	Seaton, William, Putnam, Conn. Slotting-tool holder.	Jan. 25, 1870
	Sebring, Abram. ( <i>See Ayers, Samuel S., assignor.</i> )	
99,790	Secomb, John L., Detroit, Mich. Spring bed-bottom.	Feb. 15, 1870
4,135	Secombe Manufacturing Company. ( <i>See Norton, Marcus P., assignor.</i> ) (Reissue.)	
	Sedgebeer, Joseph, Painesville, Ohio. Mill-stone dress. (Reissue.)	Sept. 27, 1870
	Sedgwick, C. H., & Sons, <i>et al.</i> ( <i>See Morgans, William T., assignor.</i> )	
104,214	See, Cornelius S., New Brunswick, N. J. Attaching sponge-holders to tables, &c.	June 14, 1870
100,932	See, John, Philadelphia, Pa. Scrubbing-brush.	Mar. 15, 1870
99,714	Seeberger, Joseph, Troy, N. Y. Stop-cock.	Feb. 8, 1870
105,497	Seebold, Jacob, Kantz, Pa. Bridge.	July 19, 1870
107,106	Same. same.	Sept. 6, 1870
	Seeds, Joseph R. D., and Christian Kieffer. ( <i>See Kieffer &amp; Seeds.</i> )	
99,245	Seehausen, H., Memphis, Tenn. Animal-trap.	Jan. 25, 1870
105,601	Seeley, D. B., Sterling, Ill. Pruning-hook.	July 19, 1870
	Seeley, Smith M., <i>et al.</i> ( <i>See Rowell, Rice &amp; Seeley.</i> )	
103,091	Seely, Charles A., New York, N. Y. Manufacture of extract of hops.	May 17, 1870
103,457	Seelye, Seymour K., Hudson, Mich. Combination-lock.	Nov. 22, 1870
166,082	Sehner, Nathaniel, assignor to self, John F. Keller, and Abraham Hufner, Hagerstown, Md. Umbrella.	Aug. 2, 1870
104,363	Seib, Henry, New York, N. Y. Meat-cutter.	June 14, 1870
108,525	Same. Vegetable-cutter.	Oct. 18, 1870
104,067	Seibel, Jacob, Manlius, Ill. Harvester.	June 7, 1870
	Seiberling, John F. ( <i>See Esterly, George, assignor.</i> ) (Three cases.) (Reissue.)	
109,677	Seitz, August, Hoboken, N. J. Confectionery for druggists.	Nov. 29, 1870
99,010	Seitzinger, George, Seneca, Ill. Fastening side-boards to grain-wagons.	Jan. 18, 1870
107,728	Selden, George, Erie, Pa. Head-block for saw-mills.	Sept. 27, 1870
99,486	Selden, George, and O. C. Briggs, assignors to George Selden, Erie, Pa. Head-block for saw-mills.	Feb. 1, 1870
104,068	Selden, George, and H. O. Kelsey, assignors to George Selden, Erie, Pa. Head-block for saw-mills.	June 7, 1870
	Selden, George S., and James Cuddy. ( <i>See Cuddy &amp; Selden.</i> )	
107,965	Selden, Samuel, and M. Griswold, Erie, Pa. Link for connecting the handles and valve-rods of pumps.	Oct. 4, 1870
105,986	Selden, William C., assignor to self and Adam Carr, Brooklyn, N. Y. Valve for steam-engines. (Antedated July 19, 1870)	Aug. 2, 1870
110,294	Selden, William C., assignor to Adam Carr, Brooklyn, N. Y. Valve for engines.	Dec. 6, 1870
3,946	Seldis, Raphael Moritz, New York, N. Y. Muff. (Design.)	Mar. 29, 1870
104,780	Same. same.	June 28, 1870
110,594	Selge, William, Cincinnati, Ohio. Tobacco-pipe.	Dec. 27, 1870
101,050	Selleck, W. L., Milwaukee, Wis. Water-wheel.	Mar. 22, 1870
105,602	Selleck, W. L., assignor to D. W. Perkins, Beetown, Wis. Water-wheel.	July 19, 1870
98,807	Sellers, George H., Wilmington, Del. Apparatus for rolling metals.	Jan. 11, 1870
163,667	Same. Phoenixville, Pa. Hydraulic housing for rolls.	May 31, 1870
	Sellers, James M., and A. K. McClure. ( <i>See Vaughan, Aaron C., assignor.</i> )	
99,356	Sellers, William, Philadelphia, Pa. Gear-cutting machine.	Feb. 1, 1870
	Same. ( <i>See Thielemann &amp; Meyer, assignors.</i> )	
101,526	Sellig, D. N., Newburgh, N. Y. Spring bed-bottom.	April 5, 1870
102,052	Sellers, John, Bellevue, Mich. Horse-collar cap.	April 19, 1870
	Selpho, William, New York, N. Y. Construction of artificial legs. (Extension.)	April 29, 1870
	Selser, William, Charles N., and John A., <i>et al.</i> ( <i>See Wicks, Loren J., assignor.</i> ) (Design.)	
101,772	Seltzer, John, Philadelphia, Pa. Store and household grapple. (Antedated March 28, 1870)	April 12, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,064	Semele, Jules, assignor to self and Joseph Garrus, New York, N. Y. Needle-case (Design) ..	May 24, 1870
4,065	Same..... Needle-case..... (Design) ..	May 24, 1870
100,077	Semple, Edward, Chicago, Ill. Trunk-stay ..	Feb. 22, 1870
100,675	Semple, Samuel, jr., Mount Holly, N. J. Stop-motion for spooling-machines ..	Mar. 8, 1870
105,987	Senseman, Francis C., assignor to self and A. E. Steel, Philadelphia, Pa. Paper-file ..	Aug. 2, 1870
102,975	Sercombe, John J. H., New London, Wis. Bending-machine.....	May 10, 1870
103,509	Sergeant, Henry C., assignor to José Francisco de Navarro, Newark, N. J. Fluid-meter ..	May 24, 1870
106,878	Sergeant, Henry C., assignor to William Tobin, Newark, N. J. Fluid-meter ..	Aug. 30, 1870
103,639	Sert, Louis G., and Christian L. Schurr, Baltimore, Md. Awning ..	Oct. 25, 1870
107,633	Servant, William, assignor to self and Joseph A. Whitman, Providence, R. I. Portable sprinkling-pump ..	Sept. 20, 1870
102,053	Servoss, Charles W., Chicago, Ill. Heating-drum ..	April 19, 1870
103,299	Sessions, Albert J., deceased, by Ellen L. Sessions, administratrix, assignor to John H. Sessions, Bristol, Conn. Trunk-clamp ..	Oct. 11, 1870
99,516	Sessions, T. E., and Samuel A. Knox, Worcester, Mass. Mold-board for plows Setchell, George C., and Cebra L. Taylor. (See Taylor & Setchell.)	Feb. 1, 1870
105,498	Severance, A. J. (See Blanchard, Virgil W., assignor.)	
99,715	Sevey, James A., Boston, Mass. Machine for splitting whalebone ..	July 19, 1870
103,785	Sewell, George, Brooklyn, N. Y. Hose-coupling ..	Feb. 8, 1870
106,103	Same..... same ..	May 31, 1870
109,554	Same..... Meter ..	Aug. 2, 1870
101,385	Sexton, James B., Pella, Iowa. Cultivator ..	Nov. 22, 1870
103,510	Sexton, Samuel B., Baltimore, Md. Base-burning fire-place stove ..	Mar. 29, 1870
	Same..... same ..	May 24, 1870
108,733	Same..... (See Rose & Caley, assignors)..... (Two cases) .. (Design.)	
100,332	Sexton, Samuel B., and George W. Beard, Baltimore, Md. Hot-air furnace.....	Oct. 25, 1870
4,212	Seymour, Albert P., Hecla Works, N. Y. Reversible hinge.....	Mar. 1, 1870
4,238	Same..... Drawer-pull..... (Design) ..	July 5, 1870
	Same..... Match-safe..... (Design) ..	July 19, 1870
106,217	Seymour, Frederick J., Wolcottville, Conn. Making brass kettles (Extension) ..	May 11, 1870
101,667	Seymour, George, England. Steering-apparatus.....	Aug. 9, 1870
	Seymour, George H., Newark, Ohio. Car-brake.....	April 5, 1870
	Seymour, Henry & Co. (See Wendt, Hermann, assignor)..... (Two cases.)	
	Same..... (See Campell, Daniel, assignor.)	
102,871	Seymour, Henry A., and Willford H. Nettleton, Bristol, Conn. Riveting-hammer ..	May 10, 1870
103,786	Seymour, Henry I., Troy, N. Y. Construction of chairs.....	May 31, 1870
	Seymour, Henry W. (See Pease, Henry, assignor.)	
3,843	Shackleton, Joseph, Rahway, N. J. Steam-heater..... (Division 1, reissue) ..	Feb. 15, 1870
3,844	Same..... same..... (Division 2, reissue) ..	Feb. 15, 1870
3,845	Same..... same..... (Division 3, reissue) ..	Feb. 15, 1870
101,668	Same..... Steam-radiator ..	April 5, 1870
101,669	Same..... Steam-heater ..	April 5, 1870
104,891	Shade, George W., Shippensburg, Pa. Horse hay-fork.....	June 28, 1870
100,707	Shaeffer, Joseph J., and Curtis C. Steinmetz, Middletown, Pa. Railway-switch ..	Mar. 8, 1870
	Shaffer, Lewis. (See Rodgers, Amos C., assignor.)	
	Shailer, S. W. (See Webber, Lorenzo D., assignor.)	
105,261	Shailer, Simon W., Deep River, Conn. Saw.....	July 12, 1870
99,357	Shaler, Alexander, New York, N. Y. Device for connecting horses to vehicles ..	Feb. 1, 1870
107,824	Shaler, Ira W., Brooklyn, N. Y. Shield for gas burners ..	Sept. 27, 1870
100,933	Shaler, Reuben, Madison, Conn. Burglar-alarm ..	Mar. 15, 1870
100,333	Shaller, Frederick, Hudson, N. Y. Railroad-car heater.....	Mar. 1, 1870
101,927	Same..... Coupling for hose and pipes.....	April 12, 1870
109,146	Shanabrook, David S., Greencastle, Pa. Sawing-machine ..	Nov. 8, 1870
110,295	Shaner, Russell M., Genoa, Ohio. Hoop-racking machine ..	Dec. 20, 1870
105,262	Shanks, Schuyler G., Richmond, Ky. Churn ..	July 12, 1870
99,011	Shanks, Thomas, Baltimore, Md. Bobbin-winder for sewing-machines ..	Jan. 18, 1870
102,164	Same..... same ..	April 19, 1870
109,950	Same..... Elevator and distributor ..	Dec. 6, 1870
99,246	Shannon, Thomas J., Lawrenceburgh, Ind. Table.....	Jan. 25, 1870
99,716	Shannon, Thomas J., assignor to self and Thomas L. Haven & Co., Lawrenceburgh, Ind. Molding-cutter.....	Feb. 8, 1870
	Shantz, Enos S., and Oliver B. Keely. (See Coulston, Thomas J., assignor.) (Two cases.)	
	Shapleigh, Thomas W., and Blaney L. Alley. (See Alley & Shapleigh.)	
110,296	Shappell, John, Lynnville, Pa. Churn ..	Dec. 20, 1870
103,194	Share, Philip T., Baltimore, Md. Sash-fastener.....	Oct. 11, 1870
	Sharkey, James, et al. (See Suediker, Luke S., assignor.)	
102,598	Sharp, Dennis P., Ithaca, N. Y. Barley or gavel fork.....	May 3, 1870
4,066	Sharp, George, Philadelphia, Pa. Spoon-handle..... (Design) ..	May 24, 1870
101,527	Sharp, James E., Eleazer Ainsworth, and Frederick A. Sabatton, Troy, N. Y. Covering for steam-boilers, &c. ....	April 5, 1870
106,965	Sharp, Thomas, and Charles S. S. Griffing, Salem, Ohio. Steam-generator ..	Aug. 30, 1870
101,773	Sharp, W. A., Tama City, Iowa. Implement. (Antedated April 7, 1870) ..	April 12, 1870
	Sharp, William H., et al. (See Palmer, Charles H., assignor.)	
108,640	Sharpe, W. A., Syracuse, N. Y. Caliper ..	Oct. 25, 1870
109,458	Sharps, Christian, Philadelphia, Pa. Propelling-mechanism ..	Nov. 22, 1870
	Sharps, Christian. (See Steiner, John H., assignor.)	
101,051	Sharts, William, Athens, N. Y. Bolt for safes ..	Mar. 22, 1870



*Alphabetical list of patentees for the year 1870—Continued*

No.	Name, residence, and invention or discovery.	Date.
102,872	Shatswell, George, Waukegan, Ill. Window-screen.....	May 10, 1870
102,873	Shatswell, George, assignor to self and Elijah M. Haines, Waukegan, Ill. Fast- ening for railway-rails.....	May 10, 1870
107,107	Shattuc, Samuel, Kipton, Ohio. Milk-can and cooler.....	Sept. 6, 1870
	Shattuck, Samuel T., and Gustavus A. Williamson. (See Herreshoff, James B., assignor.)	
103,242	Shanghnessy, James, Cincinnati, Ohio. Tool-grinding attachment to lathes....	May 17, 1870
107,825	Shaut, James H., Andover, N. Y. Stove-pipe shelf.....	Sept. 27, 1870
99,717	Shaver, Amenzo, Warnerville, N. Y. Lifting-jack.....	Feb. 8, 1870
3,794	Shaw, Daniel, Elkhart, Ind. Smut-mill and grain-separator..... (Reissue)..	Jan. 11, 1870
	Shaw, Daniel, assignor to John M. Knox, Elkhart, Ind. Smut-mill and grain- separator..... (Disclaimer filed)...	Oct. 28, 1870
103,243	Shaw, David E., Chatsworth, Ill. Feed-water heater and filter.....	May 17, 1870
103,244	Shaw, Edgar F., Boston, Mass. Boot and shoe sole-cutter.....	May 17, 1870
102,054	Shaw, Elijah, Milwaukee, Wis. Eyeletting-machine.....	April 19, 1870
106,218	Shaw, Ephraim, Tarr Farm, Pa. Mitering-machine.....	Aug. 9, 1870
107,108	Shaw, George F., West Roxbury, Mass. Mowing-machine.....	Sept. 6, 1870
100,196	Shaw, George W., Buffalo, N. Y. Separator to be used in distilling liquors....	Feb. 22, 1870
102,719	Shaw, Henry F., West Roxbury, Mass. Hoisting-gear.....	May 3, 1870
107,296	Same..... Moving-machine.....	Sept. 13, 1870
104,364	Shaw, Henry F., assignor to James A. Woodbury, West Roxbury, Mass. Cut- ting-apparatus for mowing-machines.....	June 14, 1870
106,219	Shaw, James, assignor to Conyers Button, Philadelphia, Pa. Composition for oiling wool.....	Aug. 9, 1870
101,774	Shaw, Jehyleman, Bridgeport, Conn. Tubular well. (Antedated April 4, 1870)..	April 12, 1870
4,030	Same..... Recovering gold and silver from waste solutions.... (Reissue)..	June 14, 1870
99,247	Shaw, John L., Grand Rapids, Mich. Shovel-handle.....	Jan. 25, 1870
4,031	Shaw, Louise F., New York, N. Y. Imitation hair for ladies' head-dresses.. (Re- issue).....	June 14, 1870
104,892	Shaw, Nathan Y., Greenville, N. Y. Sash-holder.....	June 28, 1870
102,874	Shaw, Spicer H., Attica, N. Y. Stall for feeding animals.....	May 10, 1870
99,791	Shaw, Thomas, Philadelphia, Pa. Compound propeller-pump.....	Feb. 15, 1870
99,958	Same..... Apparatus for forging metals.....	Feb. 15, 1870
104,215	Same..... Pile-driver.....	June 14, 1870
100,676	Shaw, Walter, assignor to self, Jonathan Vincent, and Selden D. Redman, New- fane, N. Y. Fruit-transportation box.....	Mar. 8, 1870
101,052	Shawcross, Samuel, Freeport, Ill. Adjustable garment-pattern.....	Mar. 22, 1870
99,358	Shawk, George W., assignor to the Cleveland Fire-Alarm Company, Cleveland, Ohio. Fire-alarm signal-box.....	Feb. 1, 1870
105,133	Shay, James, assignor to self and John Q. Jaynes, Cincinnati, Ohio. Vapor- burner.....	July 5, 1870
3,982	Shea, Charles, Newark, N. J. Equilibrium-spring..... (Division A, reissue)..	May 17, 1870
3,983	Same..... same..... (Division B, reissue)..	May 17, 1870
3,984	Same..... Compensating or equilibrium spring..... (Division C, reissue)..	May 17, 1870
103,511	Sheaffer, Alfred B., Ephrata, Pa. Bedstead-fastener.....	May 24, 1870
101,053	Sheaffer, Alfred B., assignor to self and John Walter, Ephrata, Pa. Hand- screw and clip for splicing broken carriage-tires.....	Mar. 22, 1870
	Sheaffer, John W., and Alonzo Sherman. (See Sherman & Sheaffer.)	
	Sheaffer, William E., and William H. Fortney. (See Fortney & Sheaffer.)	
107,413	Shearer, David S., Shelburne Falls, Mass. Combination and register padlock...	Sept. 13, 1870
107,729	Shearer, Frank B., Columbus, Ohio. Process of uniting rubber with wood....	Sept. 27, 1870
104,893	Shearer, Joseph, Timberville, Ill. Cotton-seed sower.....	June 28, 1870
109,678	Shearer, William, Atlanta, Ga. Pump.....	Nov. 29, 1870
103,245	Shearon, Andrew, assignor to Abraham, John M. and Jonas Gaar, and Wil- liam G. Scott, Richmond, Ind. Head-block for saw-mills.....	May 17, 1870
108,837	Shedd, William B. Countersink.....	Nov. 1, 1870
	Shedd, William B., and George E. Hopkins. (See Hopkins & Shedd.)	
101,928	Sheedy, James, New York, N. Y. Gas-heater.....	April 12, 1870
105,134	Sheehan, Thomas, Dunkirk, N. Y. Plow.....	July 5, 1870
	Sheeler, John, et al. (See Smith & Brown, assignors.... (Two cases.) (Design.)	
	Sheets, Daniel, and James W. Donaldson. (See Donaldson & Sheets.)	
102,599	Sheets, Isaac S., Troy, Ohio. Ditching-plow.....	May 3, 1870
103,512	Sheffer, Handy L., Marston, Wis. Medical compound for the cure of diphtheria..	May 24, 1870
102,720	Sheffield, George V., Northbridge, Mass. Heel-stiffener for boots and shoes....	May 3, 1870
102,721	Same..... Shank-piece for boots and shoes.....	May 3, 1870
99,959	Sheffield, George V. and John A., Northbridge, Mass. Medical compound.....	Feb. 15, 1870
104,894	Sheill, William, Dayton, Ohio. Scale for laying out shoe-patterns.....	June 28, 1870
109,951	Shelbourne, Sidney F., New York, N. Y., and Charles E. Emery, Brooklyn, N. Y. Direct-acting engine. (Antedated Nov. 28, 1870).....	Dec. 6, 1870
104,781	Shelden, Francis, assignor to the Union Machine Company, Fitchburgh, Mass. Apparatus for bleaching paper-stock.....	June 28, 1870
	Sheldon & Co. (See Nicol, Joseph, assignor.)	
106,625	Sheldon, Alexander J., Buffalo, N. Y. Preserving wood. (Antedated Aug. 12, 1870).....	Aug. 23, 1870
99,248	Sheldon, Alexander J., assignor to Colin Campbell, Buffalo, N. Y. Manufacture of parchment-paper.....	Jan. 25, 1870
99,249	Sheldon, Carr, Middleburgh, N. Y. Carriage-spring.....	Jan. 25, 1870
103,668	Sheldon, George G., Chicago, Ill. Kite-string holder.....	May 31, 1870
105,263	Sheldon, Gilbert L., Hartsville, Mass. Endless-chain horse-power link.....	July 12, 1870
	Sheldon, James H., et al. (See Post, Henry A. V., assignor.)	
103,787	Sheldon, Julius, New York, N. Y. Hat-blocking machine.....	May 31, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,297	Sheldon, Nathaniel P., San Francisco, Cal. Pump. (Antedated Dec. 16, 1870) ..	Dec. 20, 1870
103,193	Sheldon, Philo B., Bath, N. Y. Flower-trellis. (Antedated Sept. 26, 1870) ..	Oct. 11, 1870
4,463	Same..... Rochester, N. Y. Toaster and broiler. .... (Design) ..	Nov. 8, 1870
93,632	Shellenback, Peter, Middletown, Ohio, and John Harton, Seymour, Ind. Steam-engine.....	Feb. 8, 1870
104,365	Shellenberger, Amos, assignor to self and Z. Ligier, Versailles, Ohio. Horse hay-fork.....	June 14, 1870
107,966	Shelley, Franklin W., Muncie, Ind. Head-block for saw-mills.....	Oct. 4, 1870
99,012	Shelly, F., Alton, Ill. Lime-kiln.....	Jan. 18, 1870
	Shelmerdine, Samuel, <i>et al.</i> (See Kirk, Shelmerdine & Froggatt.) ..	
109,258	Shelmidine, Charles, Summit, N. Y. Shingle-machine.....	Nov. 15, 1870
109,459	Shelton, John H., assignor to Benedict & Burnham Manufacturing Company, Waterbury, Conn. Furniture-knob.....	Nov. 22, 1870
99,960	Shelton, Nichols, Odessa, N. Y. Churn.....	Feb. 15, 1870
4,283	Shepard, Amos, Southington, Conn. Sausage-filler..... (Design) ..	Aug. 9, 1870
109,555	Shepard, Calvin A., assignor to self and Roman Menager, Pomeroy, Ohio. Evaporating salt-brine.....	Nov. 29, 1870
100,457	Shepard, Charles U., jr., assignor to George S. Scott, Charleston, S. C. Preparing ammoniated sulphuric acid for the manufacture of fertilizers.....	Mar. 1, 1870
109,768	Shepard, David L., Foxborough, Mass. Road-scraper.....	Nov. 29, 1870
102,600	Shepard, Edwin R., Scranton, Pa. Lock-nut.....	May 3, 1870
102,601	Same..... Railway-rail.....	May 3, 1870
102,602	Same..... Compound railway-rail.....	May 3, 1870
100,677	Shepard, Frederick M., New York, N. Y. Heel of rubber boots and shoes.....	Mar. 8, 1870
100,678	Same..... Sole of rubber boots and shoes.....	Mar. 8, 1870
102,722	Shepard, George A., Bethel, Conn. Machine for covering reeds for hat-trimmings.....	May 3, 1870
98,526	Shepard, Henry W., Mannsville, N. Y. Metallic can-bottom.....	Jan. 4, 1870
101,929	Same..... Metallic can-cover.....	April 12, 1870
103,933	Same..... Milk-can handle.....	June 7, 1870
4,032	Shepard, Henry W., assignor to self and Robert Seaman, Mannsville, N. Y. Metallic can-bottom..... (Reissue) ..	June 14, 1870
103,378	Shepard, John F., Hampton Falls, N. H. Grating, sifting, and slicing machine.....	May 24, 1870
105,853	Shepard, Martin Van Buren, Chicago, Ill. Spring bed-bottom.....	July 26, 1870
106,220	Shepard, Morrill A., Evansville, Ind. Washing-machine.....	Aug. 9, 1870
107,551	Same..... Fort Branch, Ind. Combined lantern and candlestick.....	Sept. 20, 1870
102,603	Shepard, Sylvander C., Richfield, Ohio. Bob-sled.....	May 3, 1870
105,135	Shepard, William A., Chicago, Ill. Fountain-brush holder.....	July 5, 1870
100,197	Shepardson, E. O., St. Louis, Mo. Apparatus for towing rafts, &c.....	Feb. 22, 1870
99,013	Shepardson, H. S., Shelburne Falls, Mass. Lock.....	Jan. 18, 1870
100,458	Same..... Bit-brace.....	Mar. 1, 1870
102,440	Same..... Padlock.....	April 26, 1870
107,414	Same..... Combination for register-padlock.....	Sept. 13, 1870
110,595	Sheplar, Samuel H., San Francisco, Cal., and William G. Conklin, Portland, Oreg. Seed-sower.....	Dec. 27, 1870
103,934	Shepley, Granville T., West Groton, Mass. Stud-nipper.....	June 7, 1870
3,945	Sheppard, Isaac Applin, Philadelphia, Pa. Stove-ornament..... (Design) ..	Mar. 29, 1870
4,319	Same..... Plate and door of a cooking-stove..... (Design) ..	Aug. 30, 1870
	Sheridan, Cornelius A., <i>et al.</i> (See Blackburn, Wood, Price & Sheridan.) ..	
	Sheridan, Cornelius A., and Charles L. Wood. (See Wood & Sheridan.) ..	
109,147	Sherk, Christian S., Grantville, Pa. Tire-shrinker.....	Nov. 8, 1870
	Sherlock, Robert E., <i>et al.</i> (See Dougherty, John B., assignor.) ..	
	Sherlock, Stephen. (See Hatting, John B., assignor.) ..	
109,349	Sherman, Alonzo, and John W. Sheaffer, Sterling, Ill. Pump.....	Nov. 15, 1870
3,909	Sherman, Charles R., and Wendell Macy, New Bedford, Mass. Thermometer. (Design) ..	Mar. 15, 1870
108,396	Sherman, Hamilton, Waverly, Pa. Earth-closet.....	Oct. 18, 1870
103,935	Sherman, Joseph, assignor to self and William Sherman, Coopersville, Mich. Combined feed and water trough.....	June 7, 1870
107,297	Sherman, Phineas L., Geneseo Township, Iowa. Fence.....	Sept. 13, 1870
109,769	Sherry, Theron R., Newark, N. J. Filling for wood.....	Nov. 29, 1870
109,062	Sherwood, Allen, and Clarence, Auburn, N. Y. Harvester.....	Nov. 8, 1870
161,672	Sherwood, Calvin W., Chicago, Ill. School-desk.....	April 5, 1870
99,718	Sherwood, Daniel, assignor to Woods, Sherwood & Co., Lowell, Mass. Toast-rack.....	Feb. 8, 1870
101,169	Same..... Table-caster.....	Mar. 22, 1870
3,908	Sherwood, Daniel, assignor to self, Edward P. Woods, and Cyrus H. Latham, Lowell, Mass. Coffee-strainer..... (Reissue) ..	April 5, 1870
103,838	Same..... Table-caster.....	Nov. 1, 1870
105,731	Sherwood, Daniel, Edward P. Woods, and George D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Table-caster.....	July 26, 1870
105,732	Sherwood, Daniel, and George D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Table-caster.....	July 26, 1870
4,297	Sherwood, Daniel, and George D. Dudley, Lowell, Mass. Table-caster. (Design) ..	Aug. 16, 1870
	Shick, William. (See Allen, Charles L., assignor.) ..	
110,298	Shields, George W., Louisville, Ky. Steam-generator.....	Dec. 20, 1870
	Shields, James. (See Lordon, Daniel, assignor.) ..	
106,733	Shields, Nelson S., Rockford, Ill. Cultivator.....	Aug. 23, 1870
107,552	Shilling, George, Baltimore, Md. Burial-case.....	Sept. 20, 1870
103,513	Shipley, Henry W., Portland, Oreg. Water-wheel.....	May 24, 1870
110,077	Shipley, William S., Jersey City, N. J. Type-setting machine.....	Dec. 13, 1870
101,054	Shipman, Lawson, Barker, N. Y. Milk-rack and cooler.....	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,514	Shipman, Leonard R., Bloomsburgh, Pa. Towing-hook for canal-boats.....	Aug. 16, 1870
	Shireman, Joseph H. ( <i>See</i> Reynolds, George S., assignor)..... (Reissue.)	
100,078	Shirk, David B., Brunersville, Pa. Harvester-rake.....	Feb. 22, 1870
103,839	Same..... same.....	Nov. 1, 1870
99,719	Shirk, Henry and Cyrus, Lebanon, Pa. Harrow.....	Feb. 8, 1870
103,301	Shirley, Andrew J., Plymouth, Ind. Well-tube.....	Oct. 11, 1870
102,326	Shirts, Peter J., Highland Falls, N. Y. Shade-roller attachment.....	April 26, 1870
107,634	Same..... Fastening for neck-ties.....	Sept. 20, 1870
102,165	Shive, David, Philadelphia, Pa. Watchman's time-check.....	April 19, 1870
100,934	Shiver, Elisha, assignor to J. H. McBlair, Washington, D. C. Mechanism for operating sewing-machines.....	Mar. 15, 1870
100,935	Same..... Mechanism for driving sewing-machines.....	Mar. 15, 1870
105,375	Shmetzer, Louis, Chicago, Ill. Clothes-wringer.....	July 12, 1870
109,350	Shobe, James, Upper Principio, Md. Apple parer, corer, and slicer.....	Nov. 15, 1870
103,514	Shock, William H., Washington, D. C. Projectile.....	May 24, 1870
105,499	Shoemaker, Edwin B. S., Towson town, Md. Manufacturer of lubricating compounds.....	July 19, 1870
99,603	Shoemaker, E. H., and Samuel McCleery, Franklin County, Ohio. Mop and scrubber head.....	Feb. 8, 1870
103,063	Shoemaker, Henry and John A. McClintock, Perry, Ill. Mill-gearing.....	Nov. 8, 1870
108,397	Shoemaker, John, Putneyville, Pa. Tamping device for blasting purposes.....	Oct. 18, 1870
105,500	Shoemaker, Peter B., Plattsburgh, Mo. Washing-machine.....	July 19, 1870
102,055	Shoemaker, William S., Towson town, Md., and E. H. Shoemaker, Columbus, Ohio. Butter-worker.....	April 19, 1870
103,369	Shogren, Andrew, and Henry A. Adams, Sandwich, Ill. Tire-setting machine.....	May 31, 1870
110,078	Sholl, Christian, Mount Joy, Pa. Sash-lock.....	Dec. 13, 1870
99,604	Shoppell, Elias, Ashland, Ohio. Boot-pattern.....	Feb. 8, 1870
101,528	Same..... Pattern for shoes.....	April 5, 1870
105,854	Shorey, John, Lowell, Mass. Spring curtain-fixture. (Antedated July 15, 1870.)	July 26, 1870
109,845	Shorey, Samuel W., Chicago, Ill. Last for boots and shoes. (Antedated Nov. 26, 1870.)	Dec. 6, 1870
105,004	Short, Joseph H., and Clark H. Charlesworth. ( <i>See</i> Charlesworth & Short.)	
101,930	Short, Willard C., Providence, R. I. Chain-link.....	July 5, 1870
	Shortt, E. G., and C. Oberly, assignors to selves and E. B. Sims, Carthage, N. Y. Cutter-bar for harvesters.....	April 12, 1870
101,775	Shove, George, Yarmouth Port, Mass. Roofing-tile.....	April 12, 1870
107,967	Same..... Roofing.....	Oct. 4, 1870
103,092	Shrawder, John S., Fairview Village, Pa. Horse hay-rake.....	May 17, 1870
99,605	Shrimpton, Alfred, England. Needle-wrapper.....	Feb. 8, 1870
110,164	Shryock, Valentine J., Folsomville, Cal. Straw-cutter.....	Dec. 13, 1870
105,377	Shuler, Isaac C., Amsterdam, N. Y. Coffin.....	July 12, 1870
100,936	Shuler, James C., Cain Hoy, S. C. Extracting turpentine from pine-trees.....	Mar. 15, 1870
	Shuler, L. S. ( <i>See</i> Smith, James K. P., assignor.)	
103,246	Shull, Henry A. ( <i>See</i> Werntz, George W., assignor.)	
101,055	Shultis, Robert H., Ellenville, N. Y. Bark-mill.....	May 17, 1870
	Shumard, Warren, Richmond, Ind. Latch for gates.....	Mar. 22, 1870
	Shumate, James F. ( <i>See</i> Kidder, James, assignor.)	
105,733	Shunk, Alexander J., Des Moines, Iowa. Horse hay-rake.....	July 26, 1870
	Shute, Amos, and Samuel P. Carl. ( <i>See</i> Carl & Shute.)	
105,988	Shuttleworth, Charles J., Springville, N. Y. Fence-post.....	Aug. 2, 1870
107,200	Shuttleworth, George L., assignor to self and Darwin E. Washburn, Sharon, Vt. Paint-brush.....	Sept. 6, 1870
99,961	Siar, William, Franklin, Pa. Calipers.....	Feb. 15, 1870
102,604	Sibbet, R. L., New Kingston, Pa. Sash-holder. (Antedated April 23, 1870.)	May 3, 1870
100,937	Sibert, Lorenzo, Staunton, Va. Metallic alloy to imitate the precious metals.....	Mar. 15, 1870
107,553	Same..... Desulphurizing auro-pyrites and other ores. (Antedated Sept. 5, 1870.)	Sept. 20, 1870
103,053	Same..... Manufacture of iron and steel. (Antedated Sept. 24, 1870.)	Oct. 4, 1870
110,079	Sible, William H., Harrisburgh, Pa. Mortising-machine.....	Dec. 13, 1870
102,056	Sibley, James P., and Arthur Walsh, Bennington, Vt. Water-wheel regulator.....	April 19, 1870
107,109	Sibley, John J., New York, N. Y. Tuck-creasing attachment for sewing-machines.....	Sept. 6, 1870
103,670	Sibley, Willard E., Weston, Mass. Machine for cutting dovetails.....	May 31, 1870
99,360	Sickels, Frederick Elsworth, Chicago, Ill. Apparatus for sinking pneumatic piles.....	Feb. 1, 1870
102,976	Sickels, Gerard, Boston, Mass. Water-meter.....	May 10, 1870
103,379	Same..... same.....	May 24, 1870
104,216	Same..... Eye-glass holder.....	June 14, 1870
99,359	Sickels, Theophilus Elsworth, Kennett's Square, Pa. Apparatus for sinking pneumatic piles.....	Feb. 1, 1870
105,264	Same..... Car-brake.....	July 12, 1870
102,441	Siddons, John, Rochester, N. Y. Metallic roofing.....	April 26, 1870
105,989	Sidley, George, Brooklyn, N. Y. Sifting-machine.....	Aug. 2, 1870
4,080	Sidney, James C., Philadelphia, Pa. Umbrella-stand..... (Design).....	May 31, 1870
3,845	Sieben, George, assignor to James H. White, Newark, N. J. Satchel-fastening..... (Design).....	Feb. 8, 1870
101,386	Siebold, Severin, assignor to self and P. Burns, Syracuse, N. Y. Gag runner and buckle.....	Mar. 29, 1870
101,387	Same..... Ferret-lining.....	Mar. 29, 1870
104,655	Siemens, Charles William, England. Kiln for calcining ores, limestone, &c.....	June 21, 1870
109,064	Same..... Metallurgic gas-furnace.....	Nov. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,221	Siercks, Charles J., Chicago, Ill. Box.....	Aug. 9, 1870
110,080	Sieverling, Henry C., Carrollton, Ill. Plow-clevis attachment.....	Dec. 13, 1870
109,679	Sill, Ebenezer E., and Alonzo H. Bennett, Rochester, N. Y. Agricultural caul-dron.....	Nov. 29, 1870
105,265	Silver, A. R. ( <i>See</i> Deming, John, assignor.)	
	Silver, Albert R., assignor to self and John Deming, Salem, Ohio. Hub-boring machine.....	July 12, 1870
106,879	Same..... Meat-chopper.....	Aug. 30, 1870
	Silverman, Bernard. ( <i>See</i> Wolff, Robert, assignor.)	
100,679	Silverwood, Robert D., assignor to William Silverwood, Baltimore, Md. Wood-splitting machine.....	Mar. 8, 1870
106,626	Sim, Thomas, assignor to self and Jesse L. Hutchinsen, Baltimore, Md. Manu-facture of fertilizers.....	Aug. 23, 1870
100,459	Simmons, Daniel, New York, N. Y. Paper-box machine.....	Mar. 1, 1870
100,198	Simmons, Daniel, jr., New York, N. Y. Paper-box machine.....	Feb. 22, 1870
	Simmons, Francis H., and George Kilner. ( <i>See</i> Kilner & Simmons.)	
	Simmons, J. V. ( <i>See</i> Hobart, Randolph D., assignor.)	
110,504	Simmons, Thomas, and Daniel H. Lowe, Brooklyn, N. Y. Bottle-filling appa-ratus. (Antedated Dec. 16, 1870).....	Dec. 27, 1870
	Simon, William. ( <i>See</i> Wilson, James, assignor.)	
109,952	Simonds, Calvin W., assignor to Hollis Towne, Boscawen, N. H. Pocket-alarm.	Dec. 6, 1870
	Simonds, Edwin, and George H. Huntoon. ( <i>See</i> Huntoon & Simonds.)	
101,170	Simonds, John P., New York, N. Y. Ink for printing stamps, drafts, and checks.....	Mar. 22, 1870
101,931	Simonds, N. J., Woburn, Mass. Leather-cutting press.....	April 12, 1870
105,501	Same..... Boot and shoe stiffener.....	July 19, 1870
105,378	Simonds, Warren A., assignor to Joel M. Holden, Boston, Mass. Carbureting-apparatus.....	July 12, 1870
103,093	Simonds, William E., Hartford, Conn. Stud for fastening neck-ties to collars..	May 17, 1870
4,019	Simonet, John, Flatbush, N. Y. Muff..... (Design).....	May 10, 1870
102,166	Simonin, Charles F. A., Philadelphia, Pa., and Edward W. Coffin, Glendale, N. J. Cleaning wool and hair.....	April 19, 1870
4,067	Simonin, Charles F. A., Philadelphia, Pa., and Edward W. Coffin, Glendale, N. J., assignors to William Coffin. Process of extracting fatty substances. (Re-issue).....	July 12, 1870
	Simons, Joseph L. ( <i>See</i> Coogan, Edward, assignor.)	
100,079	Simons, Montgomery P., Philadelphia, Pa. Faucet-filter.....	Feb. 22, 1870
102,977	Simonson, Sigmund, Bridgeport, Conn. Table and counter.....	May 10, 1870
99,792	Simonton, John W., Taylorsville, Ind. Self-working rotary corn-planter. (Ante-dated Feb. 14, 1870).....	Feb. 15, 1870
100,811	Simonton, Thomas B., Williamsburgh, N. Y. Incline-plane elevator.....	Mar. 15, 1870
102,167	Simpson, Corelli W., Bangor, Me. Device for hanging pictures, &c.....	April 19, 1870
	Simpson, Hal, Miller & Co. ( <i>See</i> Vasseur, Hermann, assignor.) (Four cases.) (De-sign.)	
106,413	Simpson, Josiah M., Oshkosh, Wis. Parlor-grindstone.....	Aug. 16, 1870
	Simpson, Michael H., Boston, Mass. Machine for combing wool.. (Extension).....	Sept. 5, 1870
100,680	Simpson, Samuel, Wallingford, Conn. Spoon-holder and bell.....	Mar. 8, 1870
100,938	Same..... Spoon-holder.....	Mar. 15, 1870
103,247	Simpson, Thomas, Newark, Ohio. Lid and plate lifter and pot-hook.....	May 17, 1870
102,978	Simpson, Thomas D., Mount Vernon, Ohio. Locomotive and tender coupling.....	May 10, 1870
106,083	Simpson, Thomas D., Gardner B. Gray, and Joseph H. Romans, Mount Vernon, Ohio. Breech-loading fire-arm.....	Aug. 2, 1870
	Sims, E. B. ( <i>See</i> Shortt & Oberly, assignors.)	
106,084	Sims, Zachariah B., Bonham, Texas. Two-horse equalizer.....	Aug. 2, 1870
99,114	Sinclair, James A., assignor to self and Charles Messerly, Woodsfield, Ohio. One-wheeled sulky.....	Jan. 25, 1870
102,442	Sinclair, James A., assignor to self, Samuel L. Mooney, and William W. Jordan, Woodsfield, Ohio. Pump.....	April 26, 1870
108,840	Sinclair, John E., Worcester, Mass. Vise.....	Nov. 1, 1870
105,136	Singer, Edgar Collins, New Orleans, La. Machine for hulling cotton-seed.....	July 5, 1870
	Singer Manufacturing Company. ( <i>See</i> Bolton, James, assignor.)	
108,641	Singer, William H., Pittsburgh, Pa. Plate and bar for the construction of plows, cultivator-teeth, &c.....	Oct. 25, 1870
109,953	Same..... Beveling the edges of circular plates of metal.....	Dec. 6, 1870
104,056	Singleton, D. T., Eatonton, Ga. Plow.....	Mar. 22, 1870
	Singleton, James W., et al. ( <i>See</i> Mahurin, Stephen, assignor.)	
108,196	Singleton, Joseph J., Forsyth, Ga. Fertilizer-distributor.....	Oct. 11, 1870
109,954	Sink, Thomas P., Fairton, N. J. Alarm-lock.....	Dec. 6, 1870
101,388	Sinks, Henry B., Cincinnati, Ohio. Distillation.....	Mar. 29, 1870
107,110	Sintz, Clark, Clark County, Ohio. Corn plow and planter.....	Sept. 6, 1870
106,222	Sintzenich, Edwin B., assignor to self and Henry G. Hamilton, Rochester, N. Y. Steam-generator.....	Aug. 9, 1870
	Sipos, Paul. ( <i>See</i> Ehrhardt, Ferdinand, assignor.)	
103,671	Sirrinc, John, Trumansburgh, N. Y. Washing-machine.....	May 31, 1870
	Sisco, Lorenzo D., and George W. Heald. ( <i>See</i> Heald & Sisco.)	
110,596	Sisson, Henry P., Rutland, Vt. Carpenters' gauge.....	Dec. 27, 1870
100,199	Sisson, J. G., and Lark Delana, Arcola, Ill. Ditcher and grader.....	Feb. 22, 1870
102,979	Sisson, Luther, North Easton, Mass. Garden-rake.....	May 10, 1870
100,563	Siver, Simon P., Danbury, Conn. Felted fabric.....	Mar. 8, 1870
109,955	Sivertson, John B., Chicago, Ill. Pump.....	Dec. 6, 1870
107,111	Sizer, George W., and William M. Owen, New Orleans, La. Guano-distributing machine.....	Sept. 6, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,014	Skates, B. S., Whistler, Ala. Apparatus for straightening car-axles .....	Jan. 18, 1870
109,956	Skeen, Jacob, Mound City, Ill. Wagon for loading timber .....	Dec. 6, 1870
106,627	Skelly, Evan, Plaquemine, La. Machine for decorticating and drying grain .....	Aug. 23, 1870
103,788	Skiff, Miles H., Westfield, N. Y. Weather-strip .....	May 31, 1870
103,248	Skiffington, William P., New York, N. Y. Steam-generator .....	May 17, 1870
100,200	Skinner, E. W., Madison, Wis. Harvester-rake .....	Feb. 22, 1870
104,069	Skinner, Henry J., Dunkirk, N. Y. Bench-hook .....	June 7, 1870
107,298	Skinner, Henry M., Rockford, Ill. Colter .....	Sept. 13, 1870
108,398	Same.....Cultivator. (Antedated Oct. 12, 1870) .....	Oct. 18, 1870
100,812	Skinner, James B., Rockford, Ill. Cultivator .....	Mar. 15, 1870
106,223	Skinner, John, Hadley, Mich. Flour-bolt .....	Aug. 9, 1870
106,224	Skinner, John S., Lebanon, N. H. Lathe-dog .....	Aug. 9, 1870
	Skinner, Joseph C. (See Miller, Robert A., assignor.) .....	
	Skinner, L. E., and O. S. Pease. (See Pease & Skinner.) .....	
107,299	Skinner, Paul J., Oswego, N. Y. Lamp-wick .....	Sept. 13, 1870
105,502	Skinner, Robert, and Bonnet Bonnet, San Francisco, Cal. Concrete pavement .....	July 19, 1870
106,290	Skinner, Robert, and Richard Gaines; said Gaines assignor to said Skinner, San Francisco, Cal. Machine for the manufacture of composition pipes for drainage .....	Aug. 9, 1870
100,813	Skipp, James, Newark, N. J. Mortising-machine .....	Mar. 15, 1870
103,249	Skow, Charles J., Racine, Wis. Spring bed-bottom .....	May 17, 1870
101,389	Slade, Fred. J., Trenton, N. J. Casting ingots in groups .....	Mar. 29, 1870
103,094	Same.....Manufacture of steel .....	May 17, 1870
98,715	Slade, Norman P., Franklin Grove, Ill. Device for controlling horses. (Antedated Jan. 5, 1870) .....	Jan. 11, 1870
	Slag, T., et al. (See Myers, Harvey L., assignor.) .....	
	Slaght, James W. (See Pickard, Ira, assignor.) .....	
102,605	Slaight, Jacob W., and Jacob W. Androvatt, Princess Bay, N. Y. Clamp for setting rigging .....	May 3, 1870
98,639	Slane, D. F., Chillicothe, Ohio. Fruit-picker .....	Jan. 4, 1870
104,895	Same.....Feed-attachment for thrashing-machines .....	June 28, 1870
99,015	Slater, Eli, Philadelphia, Pa. Hot-air furnace .....	Jan. 18, 1870
108,642	Slater, Emerson D., Greenville, N. Y. Sash-holder .....	Oct. 25, 1870
98,716	Slater, Erastus, Girard, Pa. Railway-car brake .....	Jan. 11, 1870
99,016	Slater, Francis W., Bay City, Mich. Sewer-excavator .....	Jan. 18, 1870
108,399	Slater, James J., Nicholasville, Ohio. Desk, bureau, and churn-power. (Antedated Oct. 1, 1870) .....	Oct. 18, 1870
106,714	Slater, John, Norwich, N. Y. Washer and boiler .....	Aug. 16, 1870
109,065	Slater, Warren G., Hart, Mich. Method of cutting boot-packs .....	Nov. 8, 1870
110,299	Same.....Press for forming soles for packs .....	Dec. 20, 1870
107,554	Slaughter, David, Mountville, Pa. Shovel for seeders. (Antedated Sept. 12, 1870) .....	Sept. 20, 1870
105,005	Slawson, John B., New York, N. Y. Fare-box for vehicles .....	July 5, 1870
109,770	Slaymaker, William A., Atlanta, Ga. School desk and seat .....	Nov. 29, 1870
	Sledge, Benjamin, and Lindsay Duskin. (See Duskin & Sledge.) .....	
107,415	Sleeper, Wright, Coaticook, Canada. Compound machine for shearing, punching, upsetting, and bending metal .....	Sept. 13, 1870
102,168	Sleeth, Francis Vanvost, Keokuk, Iowa. Lamp .....	April 19, 1870
109,771	Sliker, Otto, Lincoln, Ill. Door holder or check .....	Nov. 29, 1870
105,855	Slingerland, John T., New York, N. Y. Type-setting machine .....	July 26, 1870
107,730	Sloan, Fletcher, Bolivar, Tenn. Cotton-seed planter .....	Sept. 27, 1870
105,856	Sloan, Theodore R., Brooklyn, N. Y. Pantaloons .....	July 26, 1870
	Sloane, W. & I. (See Mallinson, William, assignor.) .....	(Two cases.)
109,772	Sloane, William M., New York, N. Y. Purifying and refining oil .....	Nov. 29, 1870
	Slocum, George B., et al. (See Warriner, Baker & Slocum.) .....	
106,085	Slocum, John H., and George F. Turner, Fayette, Mo. Tanning .....	Aug. 2, 1870
109,680	Slocumb, Silas A., Philadelphia, Pa. Grain and fruit cleaner .....	Nov. 29, 1870
98,640	Sloss, L. L., Auburn, Ky. Plow .....	Jan. 4, 1870
	Slosson, Enos, and Matthew Lallin. (See Lallin & Slosson.) .....	
104,782	Slusser, Benjamin, Sidney, Ohio. Excavator .....	June 28, 1870
104,070	Slusser, James B., and William H. Meech, Roanoke, Ind. Grate and back for cooking-stoves .....	June 7, 1870
102,057	Sluthour, Anthony, Cleveland, Ohio. Rotary pump .....	April 19, 1870
99,606	Sly, Austin, and Samuel S. Ford, Lebanon, N. H. Rotary provision-safe .....	Feb. 8, 1870
106,734	Small, Alexander B., New Orleans, La. Metallic seal .....	Aug. 23, 1870
106,628	Small, Charles W., Worcester, Mass. Reed-organ pipe .....	Aug. 23, 1870
	Small, Z. B., et al. (See Barlow, Aslibell P., assignor.) .....	(Reissue.)
110,300	Smart, James, England. Slide-valve .....	Dec. 20, 1870
	Smart, Porter M., et al. (See Jordan, William N., assignor.) .....	
109,066	Smart, Thomas, jr., assignor to self and Edward Smart, Brockville, Canada. Thimble skein and box for vehicles .....	Nov. 8, 1870
	Smead, Charles, et al. (See Pike, Charles F., assignor.) .....	
109,469	Smedberg, James R., San Francisco, Cal. Generating gas from hydrocarbons .....	Nov. 22, 1870
	Smedley, Joseph Valentine. (See Palliser, W., assignor.) .....	
108,400	Smeed, Ebin C., Lawrence, Mass. Dumping-car. (Antedated Oct. 1, 1870) .....	Oct. 18, 1870
109,846	Smeed, William, assignor to self and Glen & Hall Manufacturing Company, Rochester, N. Y. Shaft-coupling .....	Dec. 6, 1870
	Smellie, William. (See Findlay, James, assignor.) .....	
	Smellie, William, et al. (See Sacre, Perkins & Smellie.) .....	
110,505	Smiles, James, England. Breech-loading fire-arm .....	Dec. 27, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,606	Smiley, George W., <i>et al.</i> (See Lloyd, George A., assignor.) Smith, Addison, Perrysburgh, Ohio. Sawing-machine. (Antedated April 23, 1870)	May 3, 1870
103,526	Same.....Children's dining-chair. (Antedated Oct. 8, 1870)	Oct. 18, 1870
99,697	Smith, Alfred E., Bronxville, N. Y. Carriage-axle box	Feb. 8, 1870
3,991	Same.....Carriage-axle.....(Reissue)	May 17, 1870
105,266	Same.....same	July 12, 1870
106,086	Same.....Manufacture of carriage-axes	Aug. 2, 1870
107,112	Same.....Carriage-axle	Sept. 6, 1870
109,681	Same.....Axle for carriages	Nov. 29, 1870
103,527	Smith, Alpheus D., Grafton, Ohio. Lamp-chimney cleaner	Oct. 18, 1870
99,250	Smith, Amor, Baltimore, Md. Process for rendering lard, tallow, and other fats.	Jan. 25, 1870
99,251	Same.....Process for treating fish to obtain oils and fertilizers	Jan. 25, 1870
99,252	Same.....Apparatus for rendering fatty animal matter	Jan. 25, 1870
99,253	Same.....Process for rendering rancid animal fats, and for disinfecting the gases evolved	Jan. 25, 1870
103,643	Smith, Andrew C., Roaring Falls, Tenn. Cotton-seed planter	Oct. 25, 1870
	Smith, Andrew H., and Frederick A. Stohlmann. (See Stohlmann & Smith.)	
101,321	Smith, Anna M., Pittsburgh, Pa. Washing-machine	Mar. 29, 1870
103,644	Smith, Arthur C., Joyner's Depot, N. C. Land-marker for corn-planting	Oct. 25, 1870
110,506	Same.....Plow	Dec. 27, 1870
109,461	Smith, Arthur M., <i>et al.</i> (See Hamel & Holden, assignors.) Smith, Ashbel G., and William Pettingell, assignors to selves and William H. Fowler, Painesville, Ohio. Insulator for telegraph-wires. (Antedated Nov. 11, 1870)	Nov. 22, 1870
103,197	Smith, Augustus, Pontiac, Ill. Combined corn harvester and husker	Oct. 11, 1870
110,301	Smith, Austin, Valmont, Col. Ter. Grain-scourer	Dec. 20, 1870
105,006	Smith, Bartemous, Hood Swamp, N. C. Cotton-seed planter	July 5, 1870
110,597	Smith, Barzillai C., Burlington, N. J. Combined tramway and pavement	Dec. 27, 1870
109,556	Smith, Benedict J., Osage Mission, Kans. Churn	Nov. 22, 1870
98,508	Smith, Benjamin B., and J. Campbell Harris, Philadelphia, Pa. Apparatus for desiccating substances	Jan. 11, 1870
99,361	Smith, Bryan, Falkland, N. C. Cotton-seed planter	Feb. 1, 1870
101,671	Smith, Calvin D., assignor to self and Peter C. Sawyer, Templeton, Mass. Chair-seat	April 5, 1870
103,528	Smith, Charles E., Columbus, Ohio. Vapor-burner	Oct. 18, 1870
102,169	Smith, Charles E., and Henry J. Rice, Columbus, Ohio. Vapor-burner	April 19, 1870
103,629	Same.....Vapor-chandelier	Aug. 23, 1870
103,630	Same.....Vapor-burning street-lamp	Aug. 23, 1870
	Smith, Charles F., <i>et al.</i> (See Richtenstein, Joseph, assignor.) Smith, Charles F., and Henry C. Comegys. (See Klaucke, Alexander A. C., assignor.)	
107,731	Smith, Charles G., assignor to American Metallic-Tubing Company, Chelsea, Mass. Metallic tubing	Sept. 27, 1870
101,406	Smith, Charles Hart, Baltimore, Md. Process of preparing paper for roofing and similar purposes	Mar. 29, 1870
	Smith, C. Hart, <i>et al.</i> (See Roberts, John, assignor.)	
103,415	Smith, Charles H., assignor to self and Theodore D. Day, Brooklyn, N. Y. Tatting-shuttle	Aug. 16, 1870
101,322	Smith, Charles J., Norfolk, Va. Bolt for safety-stoves for cars	Mar. 29, 1870
103,672	Same.....Safety-stove	May 31, 1870
107,113	Smith, Charles S., Seneca Falls, N. Y. Railway-switch	Sept. 6, 1870
93,641	Smith, Chester F., Torrington, Conn. Toy-pistol	Jan. 4, 1870
99,362	Smith, Christopher D., Bridgeport, Conn. Gaff-block for vessels. (Antedated Jan. 20, 1870)	Feb. 1, 1870
99,017	Smith, C. Shaler, C. H. Latrobe, and Frederick H. Smith, assignors to Smith, Latrobe & Co., Baltimore, Md. Bridge	Jan. 18, 1870
	Smith, C. W. M., <i>et al.</i> (See Farrington, George K., assignor.)	
101,932	Smith, David Francis, Sullivan, N. H. Paper collar	April 12, 1870
107,555	Smith, DeWitt C., Montgomery, Ill. Machine for dovetailing window-sash	Sept. 20, 1870
103,735	Smith, Dwight L., Waterbury, Conn. Pocket sun-dial	Aug. 23, 1870
98,717	Smith, Edmund, Germany. Pipe-coupling	Jan. 11, 1870
	Smith, Edward P. (See Lafferty, Robert M., assignor.)	
4,337	Smith, Edward T., and Joseph S. Winston, New York, N. Y. Coffin.. (Design)	Oct. 4, 1870
105,137	Smith, Elias, Cedar Falls, Iowa. Window sash and fastener	July 5, 1870
99,363	Smith, E. S., Macomb, Ill. Wind-wheel	Feb. 1, 1870
105,734	Smith, Fenwick, Austin, Texas. Side-saddle	July 26, 1870
107,963	Smith, Fillmore M., Syracuse, N. Y. Temporary paper-binder	Oct. 4, 1870
103,198	Same.....Purifying brine for the manufacture of salt	Oct. 11, 1870
	Smith, Frank W., and James K. McCullough. (See McCullough & Smith.) (Design.)	
	Smith, Franklin, and Lewis F. Whiting. (See Whiting & Smith.)	
105,857	Smith, Franklin H., Burke, Vt. Safety measuring-funnel	July 26, 1870
106,027	Smith, Franklin R., Ilion, N. Y. Hay-tedder	Aug. 2, 1870
109,351	Smith, Fred. D., Chicago, Ill. Sawing-machine	Nov. 15, 1870
103,380	Smith, Frederick H., Baltimore, Md. Rolled iron or steel column	May 24, 1870
101,529	Smith, Frederick J., Chicago, Ill. Die for making chord-bar heads	April 5, 1870
99,115	Smith, Friend W., jr., Bridgeport, Conn. Padlock	Jan. 25, 1870
99,116	Same.....same	Jan. 25, 1870
100,564	Same.....Toy money-box	Mar. 8, 1870
	Smith, F. W., jr., <i>et al.</i> (See Egge, Frederick, assignor).....(Reissue.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,171	Smith, Garrettson, and Henry Brown, assignors to C. S. and Henry Francis, H. L. and J. A. Buckwalter, and John Sheeler, Philadelphia, Pa. Cooking-stove..... (Design).....	June 21, 1870
4,172	Same..... Heating-stove..... (Design).....	June 21, 1870
109,847	Smith, George, Syracuse, N. Y. Milking-stool.....	Dec. 6, 1870
99,962	Smith, George, and John C. De Lang. (See Powell, Thomas J., assignor.)	
102,170	Smith, George A., Philadelphia, Pa. Feeding-mechanism for sewing-machines.	Feb. 15, 1870
99,018	Smith, George A., and Edward L. Miller, Philadelphia, Pa. Sewing-machine.	April 19, 1870
	Smith, George C., assignor to New York Rubber Company, Fishkill, N. Y. Rubber-hose.....	Jan. 18, 1870
	Smith, George C., and James R. Bird. (See Bird & Smith.)	
107,416	Smith, George H., Des Moines, Iowa. Cultivator.....	Sept. 13, 1870
102,980	Smith, George Hamilton, assignor to self and Stephen Gay, New Orleans, La. Medical compound.....	May 10, 1870
103,095	Smith, George Hand, New York, N. Y. Cement for pavement, walks, roofs, &c. (Antedated May 4, 1870).....	May 17, 1870
105,267	Same..... Manufacture of iron and steel.....	July 12, 1870
4,051	Smith, George L., and Daniel W. Kissam, Bridgeport, Conn. Lamp-shade. (Design).....	May 17, 1870
104,366	Smith, George L., assignor to Bridgeport Brass Company, Bridgeport, Conn. Lamp-burner.....	June 14, 1870
101,323	Smith, George W., Norwich, Conn. Water-meter.....	Mar. 29, 1870
99,487	Smith, Gibson, Groton Junction, Mass. Compound for coloring and preserving the hair.....	Feb. 1, 1870
109,773	Smith, Gibson, assignor to self and Charles W. Bannon, Groton Junction, Mass. Perfumery.....	Nov. 29, 1870
101,776	Smith, Hamilton Erastus, Newark, N. J. Multiple sponge.....	April 12, 1870
101,777	Same..... Mop, mat, and wiping-cushion.....	April 12, 1870
103,096	Same..... New York, N. Y. Columnar-mattress. (Antedated May 3, 1870).....	May 17, 1870
99,259	Smith, Hamilton E., and Garret F. Speer, assignors to Mary Jane Smith, New York, N. Y. Washing-machine.....	Nov. 15, 1870
104,783	Smith, Harlow M., Peoria, Ill. Mill-gearing.....	June 28, 1870
100,939	Smith, Henry, jr., Milwaukee, Wis. Manhole-plate for tannery stuffing-plate.....	Mar. 15, 1870
109,067	Same..... Sewer catch-basin cover.....	Nov. 8, 1870
105,603	Smith, Henry C., assignor to American Mortising-Machine Company, Lawrence, Kans. Mortising-machine.....	July 19, 1870
	Smith, H. D., & Co. (See Morse, F. B., assignor)..... (Thirteen cases.)	
101,171	Smith, Henry Julius, Boston, Mass. Electro-hydrocarbon gas-machine.....	Mar. 22, 1870
104,217	Same..... Electric-fuse head.....	June 14, 1870
107,201	Same..... Torpedo for oil-wells.....	Sept. 6, 1870
109,957	Smith, Henry W., Rainsburgh, Pa. Sleigh-brake.....	Dec. 6, 1870
105,268	Smith, Hiram, Norwalk, Ohio. Pipe-joint.....	July 12, 1870
100,460	Smith, Horace S., and William Hughes, Bloomington, Ill. Machine for cleaning and polishing tubes.....	Mar. 1, 1870
105,007	Smith, Horace S., and William D. Whitmore, Bloomington, Ill. Machine for turning crank-pins.....	July 5, 1870
102,327	Smith, Hugh, West Gray, Maine. Sleigh.....	April 26, 1870
108,199	Smith, Hugh, San Francisco, Cal. Wash for the cure of scab in sheep, &c.....	Oct. 11, 1870
109,352	Smith, Hugh, Moline, Ill. Plow.....	Nov. 15, 1870
99,793	Smith, Ira O., Muskegon, Mich. Furnace for burning edgings, saw-dust, &c.....	Feb. 15, 1870
3,932	Smith, Irulus R., assignor to Julius Gerber, Rockford, Ill. Cultivator. (Re-issue).....	April 26, 1870
102,443	Smith, Isaac, New York, N. Y. Connection for lead-pipe joints.....	April 26, 1870
100,201	Smith, Isaac T., Richmond, Va. Brake and ratchet for elevating and lowering buckets.....	Feb. 22, 1870
	Smith, Jacob H., and John H. Barr. (See Barr & Smith.)	
100,334	Smith, James, Richmond, Ind. School-desk.....	Mar. 1, 1870
102,875	Smith, James, Troy, N. Y. Flax-puller.....	May 10, 1870
103,515	Smith, James, New Haven, Conn. Drilling-machine.....	May 24, 1870
106,515	Smith, James, Altoona, Pa. Spark-arrester.....	Aug. 16, 1870
	Smith, James, et al. (See Vicars, Vicars & Smith.)	
	Smith, James Aiken. (See McArthur, William, assignor.)	
107,202	Smith, James D., Washington, D. C. Numbering-machine.....	Sept. 6, 1870
110,507	Smith, James E., assignor to self and Julius Ludwig, Chicago, Ill. Cabinet for sewing-machines.....	Dec. 27, 1870
109,848	Smith, James H., Newark, Ohio. Apparatus for the manufacture of gas from hydrocarbons.....	Dec. 6, 1870
104,784	Smith, James L., and William H. Nicodemus, Frederick, Md. Grain fanning and separating machine.....	June 28, 1870
102,645	Smith, James K. P., assignor to self and L. S. Shuler, Jeffersonville, Ind. Cider-mill.....	Oct. 25, 1870
103,936	Smith, James L., Pemberton, N. J. Corn-dropper.....	June 7, 1870
104,071	Smith, James M., Seymour, Conn. Grater.....	June 7, 1870
104,505	Smith, James S., Middletown, Conn. Twine-holder.....	June 21, 1870
107,556	Same..... Twine-holder stand.....	Sept. 20, 1870
99,019	Smith, James T., Washington, D. C. Number-plate for doors, &c.....	Jan. 18, 1870
108,943	Smith, Jared W., Hartford, Conn. Grooving-machine.....	Nov. 1, 1870
102,607	Smith, Jeremiah P., Hummelstown, Pa. Combined corn-sheller and vegetable-slicer.....	May 3, 1870
98,809	Smith, Joel F., Forest Hill, Cal. Medicine or liniment for treating nervous diseases.....	Jan. 11, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No	Name, residence, and invention or discovery.	Date.
105,590	Smith, John, Boston, Mass. Interfering-pad for horses.....	Aug. 2, 1870
108,401	Smith, John, St. Paul, Minn. Gymnastic-apparatus.....	Oct. 18, 1870
3,930	Smith, John, assignor to Hartford Carpet Company, Enfield, Conn. Carpet-pattern.....	(Design) Mar. 22, 1870
3,931	Same..... Carpet-pattern.....	(Design) Mar. 22, 1870
108,059	Smith, John, assignor to Henry and Hamilton Disston, Philadelphia, Pa. Saw.....	Oct. 4, 1870
	Smith, John, and Henry Robinson. (See Robinson & Smith.)	
104,367	Smith, John, and Godfrey Joithe, Newark, N. J. Crank-motion for engines.....	June 14, 1870
109,958	Smith, John A., Brooklyn, N. Y. Cork-screw.....	Dec. 6, 1870
	Smith, John B., and James D. Pierce. (See Pierce & Smith.)	
107,557	Smith, John B., Samuel A. Greely, and Arthur Campaigne, Chicago, Ill. Blind-slat operator.....	Sept. 20, 1870
102,981	Smith, John C., Lebanon, Pa. Washing-soap.....	May 10, 1870
102,608	Smith, John C., assignor to self and John H. Poppy, Rochester, N. Y. Culinary vessel.....	May 3, 1870
	Smith, John D., and David Morrison. (See Morrison & Smith.)	
102,982	Smith, John E., Waterbury, Conn. Hat-check.....	May 10, 1870
4,426	Same..... Buckle.....	(Design) Oct. 18, 1870
104,506	Smith, John E., Buffalo, N. Y. Meat-cutter. (Antedated June 15, 1870).....	June 21, 1870
108,060	Smith, John E. and Charles L., South Dedham, Mass. Tanning-vat.....	Oct. 4, 1870
104,218	Smith, John F., and Harrison Underwood, Westmoreland, N. Y. Root-cutter.....	June 14, 1870
105,991	Smith, John Harry, Brooklyn, N. Y. Cake-pan.....	Aug. 2, 1870
105,992	Same..... same.....	Aug. 2, 1870
104,785	Smith, John Henry, Allegheny City, Pa. Manufacture of steel-headed horse-shoe-nails.....	June 28, 1870
99,020	Smith, John Joseph Charles, assignor to the Metallic Compression Casting Company, Somerville, Mass. Bell-pull.....	Jan. 18, 1870
4,129	Smith, John Joseph Charles, assignor to the Metallic Compression Casting Company, assignor to the Russell & Erwin Manufacturing Company, Somerville, Mass. Bell-pull knob.....	(Design) June 7, 1870
4,130	Same..... same.....	(Design) June 7, 1870
4,131	Same..... Door-knob.....	(Design) June 7, 1870
4,132	Same..... same.....	(Design) June 7, 1870
4,133	Same..... same.....	(Design) June 7, 1870
4,134	Same..... same.....	(Design) June 7, 1870
4,135	Same..... same.....	(Design) June 7, 1870
4,136	Same..... same.....	(Design) June 7, 1870
4,137	Same..... same.....	(Design) June 7, 1870
4,138	Same..... same.....	(Design) June 7, 1870
109,353	Smith, John M., Jerseyville, Ill. Draught-device for harvesters.....	Nov. 15, 1870
	Smith, John M. (See Baker, Haydn M., assignor.)	
	Smith, John M., and Josiah M. Read. (See Read & Smith.)	
106,088	Smith, John O., Reiley, Ohio. Portable fence.....	Aug. 2, 1870
	Smith, John S. (See Case, Daniel W., assignor.)	
99,720	Smith, John W. X., Independence, Iowa. Churn.....	Feb. 8, 1870
104,219	Smith, John Y., Pittsburgh, Pa. Metallurgic furnace for iron and steel. (Antedated June 3, 1870).....	June 14, 1870
104,220	Same..... Process for purifying and reducing magnetic ores of iron. (Antedated June 3, 1870).....	June 14, 1870
104,221	Same..... Magnetic machine for cleaning and separating ores of iron. (Antedated June 3, 1870).....	June 14, 1870
109,354	Same..... Machine for separating magnetic iron ores from other substances.....	Nov. 15, 1870
109,355	Same..... Furnace and process for treating iron and other ores.....	Nov. 15, 1870
107,969	Smith, J. Hyatt, Brooklyn, N. Y. Reading-glasses.....	Oct. 4, 1870
109,462	Smith, Jonas P., Pioneer, Pa. Tube-drawer for deep wells.....	Nov. 22, 1870
109,463	Same..... same.....	Nov. 22, 1870
109,464	Same..... Sucker-rod drawer for wells.....	Nov. 22, 1870
107,732	Smith, Jonathan L., Liberty Centre, Ohio. Bee-hive.....	Sept. 27, 1870
103,381	Smith, J. Nottingham, Jersey City, N. J. Brick-press.....	May 24, 1870
105,379	Smith, J. Plummer, assignor to self and Henry Chandler, Buffalo, N. Y. Liquid-meter.....	July 12, 1870
100,940	Smith, Joseph T., Louisville, Ky. Railroad-conductors' ticket-case.....	Mar. 15, 1870
108,841	Smith, Joseph William, Boston, Mass. Suspenders.....	Nov. 1, 1870
	Smith, Joseph W., and Thomas O. Potter. (See Greely, B.-J., assignor.)	
106,966	Smith, Justin Malancan, Haddam, Conn. Plow.....	Aug. 30, 1870
	Smith, Leander E., and Lucius Jordan. (See Jordan & Smith.)	
	Smith, Leonard O., et al. (See Armstrong, Benjamin A., assignor.)	
	Smith, Leroy H., and James O. Lobdell. (See Lobdell & Smith.)	
106,631	Smith, Levi, Chester Centre, Mass. Seed-planter.....	Aug. 23, 1870
105,503	Smith, Levi F., Philadelphia, Pa. Gauge-cock.....	July 19, 1870
107,114	Same..... Low-water and high-steam indicator.....	Sept. 6, 1870
107,826	Same..... Lubricator.....	Sept. 27, 1870
109,959	Same..... Combined high and low water indicator.....	Dec. 6, 1870
107,970	Smith, Loyst J., assignor to self and H. D. Blake, New York, N. Y. Adjustable time-table.....	Oct. 4, 1870
107,971	Same..... Car-coupling.....	Oct. 4, 1870
108,402	Same..... Railway chair and clamp.....	Oct. 18, 1870
104,368	Smith, Luther, assignor to James A. Pevey, Lowell, Mass. Log-measuring scale.....	June 14, 1870
100,202	Smith, Luther L., Brooklyn, N. Y. Negative plate for a "Smee" battery.....	Feb. 22, 1870
99,488	Smith, Marshall P., Baltimore, Md. Drier.....	Feb. 1, 1870
107,417	Same..... same.....	Sept. 13, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,068	Smith, Marshall P., Baltimore, Md. Drying and preserving apples .....	Nov. 8, 1870
107,972	Smith, Menzo A., Middlefield, N. Y. Corn-harvester .....	Oct. 4, 1870
110,081	Smith, Michael, assignor to Russell & Erwin Manufacturing Company, Somerville, Mass. Process of removing earthy matters from bronze and other castings .....	Dec. 13, 1870
101,324	Smith, Myron H., Lawton, Mich. Grain-separator .....	Mar. 29, 1870
103,250	Smith, Oliver C., and Theodore S. Doll, Menallen, Pa. Sawing-machine .....	May 17, 1870
101,057	Smith, Olney L., Providence, R. I. Dumping-car .....	Mar. 22, 1870
101,172	Smith, Orson H., and Willett Fisher, Marathon, N. Y. Metallic corner-support for carriage boxes and seats .....	Mar. 22, 1870
106,216	Smith, Orson W., Flint, Mich. Apparatus for carrying grain, plaster, &c., for sowing .....	Aug. 9, 1870
102,058	Smith, Othniel J., Wauwatosa, Wis. Wrench .....	April 19, 1870
105,604	Same .....	July 19, 1870
	Smith, P. (See Davis, Jarvis, assignor.)	
	Smith, Palmer C., et al. (See Haswell & Irwin, assignors.)	
110,302	Smith, Peter E., Scotland Neck, N. C. Cultivator .....	Dec. 20, 1870
4,008	Smith, Richard, assignor to Mackellar, Smiths & Jordan, Philadelphia, Pa. Type .....	May 3, 1870
4,213	Same .....	July 5, 1870
4,267	Same .....	July 26, 1870
4,269	Same .....	Aug. 9, 1870
101,173	Smith, Richard Alfred, Atchison, Kans. Lime-kiln .....	Mar. 22, 1870
	Smith, Robert A., Newburyport, Mass. Blast-apparatus for furnaces .....	Nov. 15, 1870
106,416	Smith, Rodney L., deceased, by Elisha Turner, executor, Wolcottville, Conn. Curtain-fixture .....	Aug. 16, 1870
103,260	Smith, Roscoe J., North Haven, Me. Tackle-block. (Antedated Nov. 5, 1870) ..	Nov. 15, 1870
4,021	Smith, Roswell T., and Joseph K. Priest, assignors to selves, William Earl, and John G. Blunt, Nashua, N. H. Device for shearing and clipping horses and other animals .....	June 7, 1870
104,222	Smith, Roswell T., Joseph K. Priest, and William Earl, Nashua, N. H. Animal-shearing machine .....	June 14, 1870
102,171	Smith, Ruth N., New York, N. Y. Churn-power .....	April 19, 1870
110,165	Smith, Samuel F., assignor to Osgood, Smith & Co., Indianapolis, Ind. Sand-paperying machine .....	Dec. 13, 1870
	Smith, Samuel F., and Jacob Woodburn. (See Woodburn & Smith.)	
105,504	Smith, Samuel H., Altoona, Pa. Railway-rail chair .....	July 19, 1870
98,642	Smith, Silas, West Stockholm, N. Y. Stump-extractor and rock-lifter .....	Jan. 4, 1870
99,117	Smith, S. Curtis, Boston, Mass. Safety-stop for watches .....	Jan. 25, 1870
102,192	Smith, Solomon P., Waterford, N. Y. Horse hay-rake .....	April 19, 1870
103,769	Same .....	May 31, 1870
103,261	Smith, Stephen J., Farmington, N. J. Hay-rack for wagons. (Antedated Oct. 29, 1870) .....	Nov. 15, 1870
103,646	Smith, Stephen M., Canal Dover, Ohio. Washing-machine .....	Oct. 25, 1870
107,300	Smith, Stephen N., assignor to the Union Eyelet Company, Providence, R. I. Shoe-stay stock, and machine for making the same .....	Sept. 13, 1870
110,503	Same .....	Dec. 27, 1870
4,516	Smith, Theron I., Attleborough, Mass. Bracelet .....	Dec. 13, 1870
101,672	Smith, Thomas, jr., Boston, Mass. Tea-pot .....	April 5, 1870
108,061	Same .....	Oct. 4, 1870
102,933	Smith, Thomas Franklin, New York, N. Y. Medicated soap .....	May 10, 1870
103,251	Smith, Thomas H., Urbana, Ohio. Time-alarm .....	May 17, 1870
103,332	Smith, Thomas H., Clyde, N. Y. Seed-planter .....	May 24, 1870
109,465	Smith, Thomas Jordan, Cornerville, Miss. Wheel for vehicles .....	Nov. 22, 1870
104,507	Smith, Thomas S., Cincinnati, Ohio. Method of making files .....	June 21, 1870
100,941	Smith, Thomas S., assignor to self and O. H. P. Anderson, Cincinnati, Ohio. Corn-thusker .....	Mar. 15, 1870
99,999	Smith, Timothy, assignor to Luther L. and Stoughton B. Holden, Boston, Mass. Hinge .....	Feb. 15, 1870
99,118	Smith, T. J., Holly Springs, Miss. Combined plow, planter, and cultivator .....	Jan. 25, 1870
99,021	Smith, T. Rice, and James Mitchell, Jacksonville, Ill. Clothes-sprinkler .....	Jan. 18, 1870
102,173	Smith, Walter, Weston, Mass. Hay-tedder .....	April 19, 1870
	Smith, Westcott & Co. (See Little & Westcott, assignors.)	
106,736	Smith, Willard H., New York, N. Y. Vapor-burner .....	Aug. 23, 1870
	Smith, William, New York, N. Y. Corded elastic fabric. (Disclaimer filed) ..	Jan. 21, 1870
99,963	Smith, William, Cicero, Ind. Hot-air furnace .....	Feb. 15, 1870
100,203	Smith, William, Philadelphia, Pa. Steam-engine governor .....	Feb. 22, 1870
102,174	Same .....	April 19, 1870
104,072	Smith, William, Allegheny City, Pa. Machine for cleaning cast-iron pipe .....	June 7, 1870
106,089	Smith, William, San Francisco, Cal. Water-closet receiver .....	Aug. 2, 1870
105,647	Smith, William, Pittsburgh, Pa. Molding pipe .....	Oct. 25, 1870
105,380	Smith, William, and Hiram D. Rogers, assignors to Hiram D. Rogers, Cincinnati, Ohio. Method of producing price-current sheets. (Antedated Jan. 26, 1870) ..	July 12, 1870
103,466	Smith, William, assignor to self and Herman Greve, Tomah, Wis. Stump-extractor .....	Nov. 22, 1870
107,733	Smith, William A., Dresserville, N. Y. Saw-set .....	Sept. 27, 1870
103,403	Smith, William B., Oskaloosa, Iowa. Meal-chest or bin .....	Oct. 18, 1870
105,008	Smith, William Cameron, Warrensburgh, Mo. Construction of dental impression-molds .....	July 5, 1870
107,115	Smith, William C., New Britain, Pa. Safety-truck and car-brake .....	Sept. 6, 1870
101,390	Smith, William E., Chicago, Ill. Graduated rule and pattern for tailors .....	Mar. 29, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,721	Smith, William Grow. ( <i>See</i> Grow, Henry, assignor.)	
107,827	Smith, William H., Charlestown, Mass. Cartridge.	Feb. 8, 1870
103,516	Smith, William H., Jackson, Pa. Shovel	Sept. 27, 1870
	Smith, William James, assignor to self and George W. May, Trevillians, Va. Truss.	May 24, 1870
99,964	Smith, William M., Augusta, Ga. Cotton-bale tie. (Antedated Feb. 10, 1870)	Feb. 15, 1870
99,965	Same.....Table-caster. (Antedated Feb. 5, 1870)	Feb. 15, 1870
106,417	Same.....Cotton and hay press	Aug. 16, 1870
110,598	Smith, William Merion, Columbus, Ohio. Chair-frame	Dec. 27, 1870
98,643	Smith, William P. X., New York, N. Y. Toy savings-bank	Jan. 4, 1870
101,673	Smith, William R., Branford, Conn. Reversible latch	April 5, 1870
99,743	Smith, William T., assignor to self and W. T. Maher, West Zanesville, Ohio. Sewing-machine	Feb. 8, 1870
106,418	Smith, William W., Cincinnati, Ohio. Electro-magnet	Aug. 16, 1870
106,225	Smith, Willis B., Plantsville, Conn. Dye for forging carriage-shackle blanks	Aug. 9, 1870
101,325	Smyser, Jacob H., Pittsburgh, Pa. Lubricating-compound	Mar. 29, 1870
99,489	Smythe, Job, Willing, N. Y., and Chauncey Dexter, Independence, N. Y. Stove-pipe shelf.	Feb. 1, 1870
101,530	Snavelly, Benjamin H., Penn Township, Pa. Separator	April 5, 1870
107,973	Snead, Charles W., Milledgeville, Ga. Plow	Oct. 4, 1870
106,967	Snead, Samuel P., Louisville, Ky. Sky-light	Aug. 30, 1870
108,404	Snedaker, Warren B., Phoenix, N. Y. Car-coupling	Oct. 18, 1870
103,790	Snediker, Luke S., assignor to self, William Banzett, and James Sharkey, New York, N. Y. Apparatus for rectifying spirits	May 31, 1870
108,842	Snediker, William E., New York, N. Y. Liquid-meter. (Antedated Oct. 29, 1870)	Nov. 1, 1870
102,984	Sneider, Charles Edward, assignor of one-half interest to Josias Pennington, Baltimore, Md. Shot-cartridge	May 10, 1870
100,204	Sneider, Elias F., West Penn, Pa. Railway-car coupling. (Antedated Feb 16, 1870)	Feb. 22, 1870
	Snell, A. G. ( <i>See</i> Chapman, Charles H., assignor.)	
101,391	Snell, Daniel, Little Falls, N. Y. Padlock	Mar. 29, 1870
104,786	Suell, Peter M. and Oscar, Williamsburgh, Ohio. Pump	June 28, 1870
106,226	Same.....same	Aug. 9, 1870
	Snell, Prince A. ( <i>See</i> Tucker, William, assignor.)	
3,910	Snipes, Jesse L. ( <i>See</i> Lyon, Virgil H., assignor.)	
100,080	Snodgrass, Robert M., Pittsburgh, Pa. Baggage-rack.....(Design)	Mar. 15, 1870
	Snodgrass, William, assignor to self and J. Marcellus Browne, Macomb, Ill. Portable gas-generator	Feb. 22, 1870
	Snook, G. W. ( <i>See</i> McKelvey, S. P., assignor.)	
104,787	Snow, Charles P., assignor to Sterne F. Aspinwall, Freeport, Ill. Broom-holder	June 28, 1870
	Snow, George H., and Peter Falardo. ( <i>See</i> Falardo & Snow.)	
3,919	Snow, George K., Watertown, Mass. Paper-box.....(Design)	Mar. 22, 1870
4,146	Same.....Collar-box.....(Design)	June 7, 1870
110,166	Snow, Heman S., West Meriden, Conn. Self-acting valve or cut-off for liquid cans	Dec. 13, 1870
100,942	Snow, Hervey D., Bennington, Vt. Water-wheel regulator. (Antedated March 11, 1870)	Mar. 15, 1870
109,262	Snow, Thomas, assignor of one-half interest to H. L. Spencer, Social Circle, Ga. Washing-machine	Nov. 15, 1870
103,097	Snow, William B., Chicago, Ill. Sleeping-car berth	May 17, 1870
106,737	Snow, William B., New York, N. Y. Means for adjusting car-wheels to different gauges	Aug. 23, 1870
	Snowden, George T., <i>et al.</i> ( <i>See</i> Snowden, Snowden & Lynn.)	
98,810	Snowdon, Thomas, George T. Snowden, and Isaac V. Lynn, Pittsburgh, Pa. Steam-pump	Jan. 11, 1870
109,960	Snyder, Adam, Packard, Ohio. Shifting shovel-plows	Dec. 6, 1870
103,937	Snyder, August, assignor to Atwood & McCaffrey, Pittsburgh, Pa. Valve	June 7, 1870
107,828	Snyder, Cyrus, Middletown, Ill. Plow	Sept. 27, 1870
	Snyder, Eugene, and William A. Middleton. ( <i>See</i> Reisinger, George W., assignor.)	
	Snyder, George S. ( <i>See</i> Perkins, Harford J., assignor.)	
101,531	Snyder, H. F. and G. S., Williamsport, Pa. Saw-mill	April 5, 1870
110,082	Snyder, Henry F., Williamsport, Pa. Safety-valve	Dec. 13, 1870
108,529	Snyder, Ira W., Dryden, N. Y. Water-wheel	Oct. 18, 1870
110,083	Snyder, Israel, and Peter C. Garrett, Cedar Rapids, Iowa. Base-burning stove	Dec. 13, 1870
103,353	Snyder, James P., Brooklyn, N. Y. Electro-magnetic indicator for burglar-alarms and for other purposes	May 24, 1870
	Same.....Automatic circuit-closer for electro-magnetic burglar-alarms	Sept. 13, 1870
106,419	Snyder, John H., Troy, N. Y. Machine for making chain-links	Aug. 16, 1870
108,530	Same.....Machine for making horseshoes	Oct. 18, 1870
98,811	Snyder, Samuel M., Brady, Pa. Rotary engine	Jan. 11, 1870
100,943	Same.....Railway-gate	Mar. 15, 1870
105,993	Snyder, Silas Allen, Clarendon, N. Y. Metallic chair-seat	Aug. 2, 1870
102,985	Snyder, William B., assignor to self, James E. Dewhurst, and Robert Hubbard, Bridgeport, Conn. Vaginal syringe	May 10, 1870
103,938	Snyder, William B., and Robert Hubbard, Bridgeport, Conn. Sash-fastening	June 7, 1870
106,968	Snyder, William B., assignor to the Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Apparatus for hemming, &c., for sewing-machines	Aug. 30, 1870
	Sofge, Ferdinand M., <i>et al.</i> ( <i>See</i> Richards, Sofge & Richards.)	
99,119	Soggs, Henry, Columbus, Pa. Vegetable and fruit paring-knife	Jan. 25, 1870
110,167	Same.....Fruit and vegetable parer	Dec. 13, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,532	Soley, William H., and George Stites, Philadelphia, Pa. Friction calender-rolls for paper.....	April 5, 1870
103,098	Solliday, Reuben, Allentown, Pa. Stove-grate.....	May 17, 1870
106,880	Solomon, James K. B., Riggsville, Pa. Machine for bending wood.....	Aug. 30, 1870
103,961	Solomon, Joseph Jones, Philadelphia, Pa. Box for packing bottles.....	Dec. 6, 1870
106,738	Somers, Daniel M., assignor to Levi L. Tower, Brooklyn, N. Y. Suspension-ring.....	Aug. 23, 1870
106,291	Somers, George E., Waterbury, Conn. Cutter-head.....	Aug. 9, 1870
	Somers, Henry. (See Hoold, H. J., assignor.)	
101,533	Somerville, David M., et al. (See Comstock, Francis M., assignor.)	
	Somerville, Thomas, assignor to self and Robert Leitch, Washington, D. C. Faucet.....	April 5, 1870
104,369	Somerville, William, Buffalo, N. Y. Interfering-pad for horses.....	June 14, 1870
99,254	Somes, Daniel E., Washington, D. C. Apparatus for preserving and freezing...	Jan. 25, 1870
99,722	Same..... Device for ventilating and cooling or warming beds.....	Feb. 8, 1870
100,681	Same..... Apparatus for refrigerating and preserving.....	Mar. 8, 1870
100,682	Same..... Cooling and preserving tank.....	Mar. 8, 1870
100,683	Same..... Apparatus for cooling and preserving.....	Mar. 8, 1870
101,332	Same..... Cooling air and liquids.....	Mar. 29, 1870
102,936	Same..... Apparatus and process for refrigerating, preserving, and ventila-ting.....	May 10, 1870
108,531	Somes, Daniel E. and Frank C., Washington, D. C. Steam-heater.....	Oct. 18, 1870
	Sommer, M. M., and F. J. Herpers. (See Herpers & Sommer.)	
104,223	Soper, William, England. Breech-loading fire-arm.....	June 14, 1870
106,739	Soper, W. Horace, Baltimore, Md. Railway-car seat.....	Aug. 23, 1870
100,944	Sorel, Stanislas, assignor to John F. Wood, France. Manufacture of cement for artificial stone.....	Mar. 15, 1870
100,945	Same..... Manufacture of artificial stone.....	Mar. 15, 1870
103,517	Sorenson, Soren, assignor to self and Sophus and P. J. McKenzie Orting, Den-mark. Preparation of artificial leather from scrap-leather, &c.....	May 24, 1870
	Sorrento Wood-Carving Company. (See Leavitt, Thomas, assignor.)	
98,891	Sory, Artaxerxes W., Prairie County, Ark. Current-water wheel.....	Jan. 18, 1870
107,302	Soule, Charles and Richard, et al. (See Baylor, C. F., assignor.)	
	Soule, Peter, Windsor, N. Y. Corn-planter.....	Sept. 13, 1870
	Soules, Blaise. (See Martin, Eugene, assignor.)	
	Southington Cutlery Company. (See Healy & Raymond, assignors.)	
101,674	Southwick, Christopher S., and David H. Baker, Newport, R. I. Nut-lock.....	April 5, 1870
98,527	Southwick, E. B., Mendon, Mich. Bag-string fastener.....	Jan. 4, 1870
109,263	Southworth, Edward W. (See Whitehouse, A. S., assignor.)	
	Southworth, Theodore J., Rochester, N. Y., and William H. Lawton, Elmira, N. Y. Tag. (Antedated Nov. 3, 1870).....	Nov. 15, 1870
109,143	Spang, Jacob D., Dayton, Ohio. Apparatus for carbureting air.....	Nov. 8, 1870
110,303	Spang, William, Philadelphia, Pa. Type-casting machine.....	Dec. 20, 1870
102,723	Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Reversible latch.....	May 3, 1870
104,370	Same..... Latch for cupboards.....	June 14, 1870
107,418	Same..... Cupboard-latch.....	Sept. 13, 1870
	Sparrow & Swan. (See Cook, Roswell F., assignor.)	
103,673	Spaulding, George H., Rockford, Ill. Grain-binder.....	May 31, 1870
105,009	Spaulding, James P., Williamsport, Pa. Well-filter.....	July 5, 1870
100,205	Speakman, Thomas S., Camden, N. J. Furnace.....	Feb. 22, 1870
101,933	Same..... Lubricating axle-boxes.....	April 12, 1870
101,174	Spear, Charles, New York, N. Y. Submarine tunnel.....	Mar. 22, 1870
106,881	Spear, Charles E., assignor to Eugene Humphrey, Gardiner, Me. Adding-machine.....	Aug. 30, 1870
100,946	Spear, Hatherly, Cape Elizabeth, Me. Combined current-wheel and condensing-engine.....	Mar. 15, 1870
103,518	Same..... Water-elevator.....	May 24, 1870
100,335	Spear, James, Philadelphia, Pa. Base-burning stove.....	Mar. 1, 1870
102,328	Same..... Coal-stove.....	April 26, 1870
106,632	Spear, Lewis H., Peekskill, N. Y. Preserving meat.....	Aug. 23, 1870
103,252	Spear, Robert, New Haven, Conn. Pipe for transmitting pneumatic currents for power.....	May 17, 1870
109,682	Spear, Samuel S., South Weymouth, Mass. Sleigh.....	Nov. 29, 1870
104,073	Spear, William, Cape Elizabeth, Me. Alarm for safes.....	June 7, 1870
110,599	Spears, Harde, Snow Hill, N. C. Portable shield for infantry and artillery.....	Dec. 27, 1870
107,734	Spears, William, Jamestown, N. Y. Manufacture of hydrocarbon oil.....	Sept. 27, 1870
100,565	Spedden, Eugene, Astoria, Oreg. Riding-saddle.....	Mar. 8, 1870
108,843	Spedden, Robert R. and Harriet T., Astoria, Oreg. Cleaning-attachment for hoes.....	Nov. 1, 1870
	Speer, Garret F., and Hamilton E. Smith. (See Smith & Speer.)	
	Speer, Peter T., and William D. Russell. (See Baxter, William, assignor.)	
110,304	Speers, Noah W., Memphis, Tenn. Cotton-press. (Antedated Dec. 8, 1870).....	Dec. 20, 1870
	Speers, William H. (See Elliott, William T., assignor.)	
100,336	Spellman, W. C., Hartford, Conn. Broom.....	Mar. 1, 1870
103,791	Same..... Providence, R. I. Broom-head.....	May 31, 1870
105,994	Spence, James F., Brooklyn, N. Y. Apparatus for carbureting air.....	Aug. 2, 1870
99,274	Spence, James F., Brooklyn, N. Y., and Lovias D. Towsley, Newark, N. J. Ap-paratus for carbureting air.....	Jan. 25, 1870
107,635	Same..... Rotary air-wheel for gas-carbureters.....	Sept. 20, 1870
110,084	Spence, Peter, Great Britain. Manufacture of alum and fertilizers from mineral phosphates.....	Dec. 13, 1870
99,364	Spencer, Albert H., Providence, R. I. Clothes-wringer.....	Feb. 1, 1870
99,608	Same..... Laundry-bench.....	Feb. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,723	Spencer, Albert H., Providence, R. I. Locomotive-tender loader .....	Feb. 8, 1870
	Same.....(See Wiswall, Samuel, assignor).....(Reissue.)	
	Same.....(See Young, Allen P., assignor.)	
100,206	Spencer, A. J., Middletown, Conn. Shifting-bar for sleighs.....	Feb. 22, 1870
	Spencer, Charles A. (See Clarke, Almon, assignor.)	
99,724	Spencer, Charles F., Rochester, N. Y. Button-fastener for shoes.....	Feb. 8, 1870
100,947	Spencer, Elihu, Elizabeth, N. J. Heating-attachment for steam-boilers.....	Mar. 15, 1870
107,419	Spencer, George H., assignor to self and Joshua B. Glenn, Cleveland, Ohio. Spoon.....	Sept. 13, 1870
107,420	Same.....Finger-guard.....	Sept. 13, 1870
	Spencer, H. L. (See Snow, Thomas, assignor.)	
99,794	Spencer, J. Civilian, Phelps, N. Y. Engraving-machine.....	Feb. 15, 1870
	Spencer, John Frederick, and William Inglis. (See Inglis & Spencer.)	
106,882	Spencer, Lewis W., assignor to Peter Lorillard, New York, N. Y. Process for manufacturing plug-tobacco.....	Aug. 30, 1870
106,883	Same.....Plug-tobacco machine.....	Aug. 30, 1870
107,829	Spencer, Naaman, jr., Eagle Point, Ill. Gang-plow.....	Sept. 27, 1870
105,269	Spencer, Thomas P., Jersey City, N. J. Packing-case for perfumery, &c. (Ante-dated June 23, 1870).....	July 12, 1870
	Sperry, David E. (See Thickins, Richard W., assignor.)	
	Sperry, Edwin K., and Simeon Rogers. (See Rogers & Sperry.)	
39,022	Sperry, John, New York, N. Y. Picture-frame.....	Jan. 18, 1870
101,326	Sperry, Joseph, Charleston, Ill. Bed-bottom.....	Mar. 29, 1870
99,255	Speyer, Jacob W., Germany. Fertilizer.....	Jan. 25, 1870
103,384	Same.....Sizing cotton and other fabrics.....	May 24, 1870
4,239	Spicer, George T., Charles H. Peckham, and William A. Spicer, Providence, R. I. Stove.....(Design).....	July 19, 1870
105,735	Spicer, Pratt A., and Montgomery Crossman, Marshall, Mich. Automatic gate.....	July 26, 1870
105,010	Spicer, Wells, Summit County, Col. Ter. Apparatus for saving mercury from the washings of gold and silver ores.....	July 5, 1870
	Spicker, Ellis L. (See Harnly, Jacob H., assignor.)	
101,934	Spiegelmyer, Linda, Hartleton, Pa. Child's body-brace and supporter.....	April 12, 1870
101,175	Spill, Daniel, England. Manufacture of xyloidine and its compounds.....	Mar. 22, 1870
105,011	Spiller, Oscar Max, Akron, Ohio. Medical compound for the cure of fever and ague.....	July 5, 1870
103,792	Spinney, William F., assignor to Gordon McKay, trustee, Lynn, Mass. Boot and shoe-heeling machine.....	May 31, 1870
99,023	Splitdorf, Henry, assignor to self and Jacob Weiss, New York, N. Y. Spring toy-ball.....	Jan. 18, 1870
101,779	Spoehr, Frederick, Philadelphia, Pa. Mechanism for operating the feeding-wheel in sewing-machines.....	April 12, 1870
	Spoelrer, H., et al. (See Heist, John, assignor.)	
102,329	Spooner, Charles Easton, and George Augustus Huddart, Wales. Railway-rail joint.....	April 26, 1870
107,830	Spooner, D. Brainerd, Syracuse, N. Y. Device for actuating the valve of fluid-meters.....	Sept. 27, 1870
39,365	Spooner, John A., and John Ellerby, Brooklyn, N. Y. Button.....	Feb. 1, 1870
	Spooner, Lyssander, Boston, Mass. Elastic bottom for chairs and other articles. (Extension).....	May 25, 1870
107,421	Sprague, Alvah J., Springfield, Mo. Chimney.....	Sept. 13, 1870
	Sprague, Amasa. (See Eristow, Thomas, assignor).....(Two cases.)	
105,270	Sprague, Andrew J., Toledo, Ohio. Brick-repressing machine.....	July 12, 1870
	Sprague, Chandler. (See Sanford, Joseph Henry, assignor.)	
104,896	Sprague, Elonzo, and George C. Belt, Bridgeton, Ind. Animal-trap.....	June 23, 1870
109,774	Sprague, Henry L., and Jacob N. Guyon, Tottenville, N. Y. Wash-boiler.....	Nov. 29, 1870
99,490	Sprague, J. G., Lexington, Ill. Combined hedge-trimmer and stalk-cutter.....	Feb. 1, 1870
	Sprague, Richard T. and Charles D. (See Duval, Jules, assignor.)	
	Sprague, Thomas S., et al. (See Eberts, Hermann F., assignor.)	
	Same.....(See Howell, Daniel Y., assignor.)	
98,892	Sprague, Watson N., Keene, N. H. Plant-protector.....	Jan. 18, 1870
103,793	Spring, Charles, Hyde Park, Mass., and Andrew Spring, Weston, Mass. Steam-generator.....	May 31, 1870
101,534	Spring, S. B., Geneva, Ohio. Soda-fountain.....	April 5, 1870
4,290	Spring, Solomon C., Bristol, Conn. Clock-case front.....(Design).....	Aug. 9, 1870
109,557	Springer, Uriah A., Pontiac, Ill. Bee-hive.....	Nov. 22, 1870
101,180	Springer, Ezra, Davis, Ill. Apparatus for moving cars.....	April 12, 1870
102,609	Springer, George A., Chicago, Ill. Roll for making rails for street-railways.....	May 3, 1870
101,327	Springer, Samuel, Chicago, Ill. Bed-frame.....	Mar. 29, 1870
100,684	Springer, Theodor G., St. Louis, Mo. Gas-machine.....	Mar. 8, 1870
109,264	Same.....Feeding hydrocarbon liquids to a hot gas-retort.....	Nov. 15, 1870
100,685	Sprinkle, David A., Leoti, Ind. Machine for bending feloes.....	Mar. 8, 1870
	Sprogle, Daniel M. (See Hunt, Ralph, assignor.)	
110,509	Sprout, Ariel B., Muncy, Pa. Buck-saw.....	Dec. 27, 1870
	Squier, Daniel, and David H. Metcalf. (See Metcalf & Squier.)	
101,781	Squier, John H., and Ezra J. Warner, Newark, N. J. Picture-nail.....	April 12, 1870
99,966	Squier, Wesley, Edon, Ohio. Horse-rake.....	Feb. 15, 1870
	Squire, John J., De Soto, Mo. Horse-rake.....(Disclaimer filed).....	Dec. 16, 1870
	Same.....same.....(Extension).....	Dec. 22, 1870
99,256	Squires, B. W., and Charles M. Clinton, assignors to Sewell D. Thompson and David P. Goodhue, Ithaca, N. Y. Binding-attachment for harvesters.....	Jan. 25, 1870
102,724	Staats, William H., Crescent, N. Y. Railway-switch.....	May 3, 1870
106,420	Stackpole, Charles F., Woburn, Mass. Slide-chuck for lathes.....	Aug. 16, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,675	Stackpole, Greenleaf, Elizabeth, N. J. Broom.....	April 5, 1870
103,532	Stacy, George B., Richmond, Va. Separating-attachment for husk-hackling machines.....	Oct. 18, 1870
105,858	Stacy, William, Hardin County, Iowa. Machine for ditching and hedging.....	July 26, 1870
99,609	Stadler, Ferdinand, Philadelphia, Pa. Sad-iron heater.....	Feb. 8, 1870
99,366	Staehlen, W., and L. Portong. (See Chwatal, H., assignor.) Staffer, Abraham and Peter, Salt Creek, Ind. Thrashing-machine and separator. (Antedated Jan. 29, 1870).....	Feb. 1, 1870
4,427	Stafford, Charles, and Robert Ramsey. (See Ramsey & Stafford.) Stafford, Nelson, Brooklyn, N. Y. Key-ring tag..... (Design).. Stafford, W. A. (See Partridge, Benjamin S., assignor.)	Oct. 18, 1870
103,962	Stafford, William H., New York, N. Y. Door-spring.....	Dec. 6, 1870
105,505	Stagg, Thomas G., East New York, N. Y. Folding-carriage for children.....	July 19, 1870
102,330	Stahl, Jacob, <i>et al.</i> (See Gerecke, Henry, assignor.) Stainthorp, John, and Isaac Cole, assignors to John Stainthorp, New York, N. Y. Machine for mixing paint, soap, and other materials.....	April 26, 1870
110,035	Staley, Franklin J., assignor to Long, Joseph & Carter, Indianapolis, Ind. Head-block for saw-mills. (Antedated Dec. 9, 1870).....	Dec. 13, 1870
99,967	Stamler, Frederick, Hamburg, N. Y. Treadle for sewing-machines.....	Feb. 15, 1870
100,686	Stamp, John Mitchell, assignor to self and Peter Johnston, Grass Valley, Cal. Tool for lacing boots.....	Mar. 8, 1870
103,674	Stanard, Gaylord Sharp, Buffalo, N. Y. Mica frame for stoves..... Stancliff, George, <i>et al.</i> (See Ryerson, Stancliff & McIntosh.) Standinger, Charles, and Martin F. Walter. (See Walter & Standinger.) Standish, Joshua. (See Burgess, John A., assignor.) Standish, Miles, and Frank Swift. (See Swift & Standish.)	May 31, 1870
102,876	Stanley, Edgar A., assignor to self and Orlando A. Palmer, Brewer, Me. Axle-nut.....	May 10, 1870
105,371	Stanley, Thomas E., Hazlehurst, Miss. Boring-tool.....	July 12, 1870
107,116	Stanley, William. (See Foster, John T., assignor.) Stannard, Abram C., Milton, Wis. Combined power-punch and shears.....	Sept. 6, 1870
103,200	Stanton, Curtis, <i>et al.</i> (See Hallock, Valentine H., assignor.) Stanton, John H., Franklin, Ohio. Carpet-fastener.....	Oct. 11, 1870
106,740	Staples, Isaac B., Attleborough, Mass. Stock or blank for bracelets.....	Aug. 23, 1870
104,224	Starbuck, George E., and Wait Mead. (See Mead & Starbuck.) Starkey, David G., New York, N. Y. Valve-gear of steam-engines.....	June 14, 1870
100,149	Starkey, John L., Worcester, Mass. Boiler-feeder and low-water detector.....	Nov. 8, 1870
101,176	Starkweather, Archibald, and Carl O. Wederkinch. (See Wederkinch & Starkweather.) Starnes, Philip S., Majority Point, Ill. Corn-planter.....	Mar. 22, 1870
110,600	Starr, James M., Fond du Lac, Wis. Life-boat.....	Dec. 27, 1870
100,069	Starr, William M., Washington, D. C. Chain water-wheel.....	Nov. 8, 1870
105,506	Starratt, James, assignor through mesne assignments to Handley Starratt and Benjamin McKeen, Salem, Mass. Machine for removing grease from leather. (Antedated March 23, 1870).....	July 19, 1870
100,207	Starrett, Helen Elkin, Lawrence, Kans. Fastening for overshoes.....	Feb. 22, 1870
103,645	Starrett, James F., New York, N. Y. Machine for shaving the heads of shoe-blanks. (Antedated Oct. 15, 1870).....	Oct. 25, 1870
107,974	Starrett, William A., and Helen E., Lawrence, Kans. Device for attaching steels to corsets. (Antedated Sept. 24, 1870).....	Oct. 4, 1870
102,331	Stauffer, Francis H., Philadelphia, Pa. Carpet-tacking machine.....	April 26, 1870
104,071	Stauffer, Henry, assignor to Nordmann Brothers, Switzerland. Watch.....	June 14, 1870
102,059	Stave, Lewis A., Oconomowoc, Wis. Clothes-drier.....	April 19, 1870
104,918	St. Clair, Charles H., New Orleans, La. Wind-wheel.....	June 23, 1870
104,656	St. Clair, Colin Cree, Detroit, Mich. Spectacles.....	June 21, 1870
100,081	St. Clair, William D., Chicago, Ill. Compound to be used as an article of diet.....	Feb. 22, 1870
100,461	Same..... Threshold.....	Mar. 1, 1870
101,935	St. Cyr, Antoine Radisson, France. Treating fatty matter for the manufacture of candles.....	April 12, 1870
103,735	Stead, George, and William Goodaire. (See Goodaire & Stead.) Stead, James Curtis, Jersey City, N. J. Machine for making staples.....	Oct. 25, 1870
100,032	Stearns, Caleb S., Marlborough, Mass. Leather-splitting machine. (Antedated Feb. 12, 1870).....	Feb. 22, 1870
3,937	Stearns, Caleb S., assignor to Charles F. Davis, Thomas Corey, and Samuel and Roger Boyd, Marlborough, Mass. Machine for cutting leather... (Reissue).. Stearns, Edward H., Erie, Pa. Machine for turning logs.....	May 24, 1870
110,398	Stearns, E. H., Erie, Pa. Head and tail block for saw-mills..... (Extension).. Same..... Journal-box.....	Dec. 20, 1870
110,086	Stearns, George N., Syracuse, N. Y. Horse hay-fork.....	April 4, 1870
99,120	Same..... Spoke-shave.....	Dec. 13, 1870
110,168	Stearns, Henry A., Smithfield, R. I. Apparatus for distilling hydrocarbons.....	Jan. 25, 1870
103,385	Same..... Apparatus for extracting oil from animal and vegetable substances.....	Dec. 13, 1870
104,519	Stearns, Joseph B., Boston, Mass. Attaching insulators to telegraph-poles.....	May 24, 1870
107,303	Stebbins, Joseph. (See Tibbitts, James B., assignor.) Stebbins, Samuel H., and Joseph L. Hannum. (See Hannum & Stebbins.) Stebbins, Solomon A., Toledo, Ohio. Apparatus for cooling grain.....	Sept. 13, 1870
102,175	Steck, George, New York, N. Y. Iron frame for upright pianos.....	April 19, 1870
100,948	Same..... Iron frame for pianos.....	Mar. 15, 1870
106,227	Steck, George, Hughesville, Pa. Saw for sawing felloes.....	Aug. 9, 1870
101,074	Stedman, Edwin R., Sparta, Ga. Guano-distributor.....	June 7, 1870
107,975		Oct. 4, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,849 3,899	Stedman, George E., Boston, Mass. Buckle .....	Dec. 6, 1870
	Stedman, Nathan, assignor through mesne assignments to New England Pump-Manufacturing Company, Pacific Pump-Manufacturing Company, Charles F. Mudge, and Bridgeport Manufacturing Company, Aurora, Ind. Pump-piston. (Reissue) .....	Mar. 29, 1870
110,510	Stedman, Nathan, Aurora, Ind. Key for shafting .....	Dec. 27, 1870
106,516	Stedman, Oscar F., Westfield, N. Y. Wash-boiler .....	Aug. 16, 1870
108,944	Same..... same .....	Nov. 1, 1870
	Steel, Alexander, <i>et al.</i> (See Tappey, Lumsden & Steel.) .....	
	Steel, A. E. (See Senseman, Francis E., assignor.) .....	
107,558	Steele, Charles L., Boston, Mass. Flower-pot .....	Sept. 20, 1870
108,062	Steele, John, Sheldon, Ill. Shaft-coupling for vehicles .....	Oct. 4, 1870
	Steele, Joseph H. (See Turnbull, A. E., jr., assignor.) .....	
101,782	Steele, William, Sistersville, W. Va. Vencer-cutter .....	April 12, 1870
	Steele, William F., <i>et al.</i> (See Hulbert, Steele & Day) .....	(Design)
103,099	Steele, Zattee Cushing, Pana, Ill. Machine for raking and cocking hay .....	May 17, 1870
	Steen, Joseph F. (See Haskell, Nathaniel, assignor.) .....	
105,381	Steers, Thomas, jr., assignor to John E. Mulford, Richmond, Va. Electro-magnetic apparatus for regulating valves and dampers .....	July 12, 1870
99,257	Steger, Joseph, New York, N. Y. Railway-car brake .....	Jan. 25, 1870
101,393	Same..... Fire-escape .....	Mar. 29, 1870
104,897	Same..... Car-brake .....	June 28, 1870
108,533	Same..... Friction-pulley .....	Oct. 18, 1870
109,265	Stegmiller, Joseph, assignor to self and Ludwig H. Rueckenbag, New York, N. Y. Mosaic floor .....	Nov. 15, 1870
	Steiger, Alexander. (See Hainque, Marshall, assignor.) .....	
102,176	Steiger, John J., Peoria, Ill. Self-acting equalizing valve .....	April 19, 1870
98,812	Steigert, Leopold, Cincinnati, Ohio. Meat-chopper .....	Jan. 11, 1870
106,884	Stein, Adam, Westfield, Mass. Valve for pneumatic draw in organs .....	Aug. 30, 1870
107,976	Stein, Henry Julius, Hannibal, Mo. Construction of steam-boilers, tanks, &c .....	Oct. 4, 1870
108,844	Steiner, John Henry, assignor to self and Christian Sharps, Reading, Pa. Carbureting attachment for gas-burners .....	Nov. 1, 1870
107,422	Steinmetz, Bernard, France. Lock for bags, &c .....	Sept. 13, 1870
	Steinmetz, Curtis C., and Joseph J. Shaeffer. (See Shaeffer & Steinmetz.) .....	
	Stekettee, George G. (See Kimm, Martinus B., assignor.) .....	
101,783	Stenberg, Sten., Sweden. Manufacture of sugar and alcohol from lichens .....	April 12, 1870
100,083	Stephan, Mathias, Canton, Ohio. Spring-chair for children .....	Feb. 22, 1870
105,995	Stephens, Andrew J., Milford, Ill. Ditching-machine .....	Aug. 2, 1870
105,507	Stephens, Anson P., Brooklyn, N. Y. Vise .....	July 19, 1870
103,520	Stephens, Charles, assignor to self, Robert H. and William J. Steptoe, New Orleans, La. Manufacture of artificial stone .....	May 24, 1870
105,508	Stephens, John, and Jairus Collins, Fairview, Ohio. Apparatus for operating window-curtains .....	July 19, 1870
109,266	Stephens, John, assignor to self and Jairus Collins, Fairview, Ohio. Curtain-fixture .....	Nov. 15, 1870
109,775	Stephens, Mary, assignor to Wright Brothers & Co., Philadelphia, Pa. Umbrella .....	Nov. 29, 1870
102,444	Stephens, Perry M., assignor of one-half interest to Perry M. Tuttle, Deer Creek, Ill. Road-scraper .....	April 26, 1870
101,936	Stephens, Thomas B., Washington, Iowa. Churn .....	April 12, 1870
104,657	Stephenson, Benjamin F., Springfield, Ill. Uterine supporter .....	June 21, 1870
	Stephenson, Benjamin T. (See Keating, Ambrose, assignor.) .....	
101,535	Stephenson, Henry, William Thompson, and William Greaves Blake, assignors to Frederic W. Griffith and George P. Byrne, England. Ornamental scroll-type .....	April 5, 1870
	Stephenson, James M., and James E. French. (See French & Stephenson.) .....	
	Steptoe, Robert H. and William J. (See Stephens, Charles, assignor.) .....	
109,150	Sterling, Edward C., St. Louis, Mo. Brick-kiln .....	Nov. 8, 1870
	Sterling, James T., <i>et al.</i> (See Post, Henry A. V., assignor.) .....	
104,372	Sterling, Leonard, and T. W. Wilson, New York, N. Y. Lamp .....	June 14, 1870
109,070	Stern, William C., and James W. Robinson, London Grove, Pa. Butter-printer .....	Nov. 8, 1870
100,462	Sternberg, George M., Fort Riley, Kans. Electro-magnetic regulator for dampers or valves .....	Mar. 1, 1870
104,788	Same..... Fruit-drier .....	June 28, 1870
105,272	Same..... Electro-magnetic apparatus for regulating valves and dampers .....	July 12, 1870
105,273	Same..... Electrical thermostat .....	July 12, 1870
4,022	Sterry, Edward A., Norwich, Conn. Faucet .....	(Reissue) June 7, 1870
3,807	Stetefeldt, Charles, Austin, Nev. Furnace for roasting and treating ores. (Division A, reissue.) .....	Jan. 25, 1870
3,808	Same..... Process of treating silver ores .....	(Division B, reissue) Jan. 25, 1870
100,337	Same..... Machine for feeding ores into-shaft-roasting furnaces .....	Mar. 1, 1870
3,866	Stetson, Bradford, assignor to self and Elmer Townsend, Uxbridge, Mass. Turbine water-wheel .....	(Reissue) Mar. 1, 1870
103,794	Same..... same .....	May 31, 1870
100,084	Stetson, Kimball W., Kingston, Mass. Water-ram. (Antedated Feb. 18, 1870) .....	Feb. 22, 1870
105,138	Stevens, Andrew, and Louis A. Cauvet, New York, N. Y. Pavement .....	July 5, 1870
100,814	Stevens, Andrew J., San Francisco, Cal. Steam-engine slide-valve. (Antedated March 5, 1870) .....	Mar. 15, 1870
	Stevens, Benjamin A. (See Howell, James R., assignor.) .....	
105,509	Stevens, Charles H., Fayetteville, N. Y. Trace-buckle .....	July 19, 1870
107,977	Stevens, Charles L., assignor to self and Albert A. and D. G. Dentan, Galesburgh, Ill. Steam-pump. (Antedated Sept. 26, 1870) .....	Oct. 4, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,394	Stevens, Chase A., New York, N. Y. Packing-journals and other parts of machinery	Mar. 29, 1870
103,521	Stevens, Cyrus S., assignor to self and Daniel F. Knight, Portland, Me. Spring bed-bottom	May 24, 1870
106,421	Stevens, Darius, Danbury, Conn. Cutter-head for planing-machines	Aug. 16, 1870
102,725	Stevens, Francis A., Chicago, Ill. Apparatus for preserving wood	May 3, 1870
108,201	Stevens, Fred. T., Columbia, N. H. Saw-mill	Oct. 11, 1870
103,063	Stevens, George D., New York, N. Y. Button-hook and handkerchief-holder combined	Oct. 4, 1870
99,993	Stevens, Henry W., <i>et al.</i> (See Miner, Stevens & Saunders)..... (Extension.)	Feb. 15, 1870
104,373	Stevens, John C., South Norwalk, Conn. Circulating-tube for steam-generators	June 14, 1870
100,208	Stevens, John W., and John P. Bacome, Westville, Ohio. Hay-rack for wagons	Feb. 22, 1870
103,302	Stevens, Levi, Washington, D. C. Manufacture of gas from petroleum	Oct. 11, 1870
109,963	Same..... Apparatus for generating gas for heating	Dec. 6, 1870
102,177	Stevens, William J., New York, N. Y. Direct-acting engine	April 19, 1870
101,676	Stevenson, Charles C., Gold Hill, Nev. Amalgamator	April 5, 1870
101,177	Stevenson, Rufus O., Baltimore, Md. Summer cooking-furnace	Mar. 22, 1870
3,802	Stevenson, Walter S., Philadelphia, Pa. Cooking-stove. (Antedated Jan. 5, 1870).	Jan. 18, 1870
99,024	Stevenson, William M., Newcastle, Pa. Balance slide-valve..... (Reissue.)	Jan. 18, 1870
108,649	Stever, Jeremiah, assignor to Isaac E. Newton, Bristol, Conn. Shuttle-driving mechanism for looms	Oct. 25, 1870
100,209	Steward, Sidney, Trenton, N. J. Carriage-spring	Feb. 22, 1870
102,178	Stewart, Alexander W., Glasgow, Scotland. Folding-chair. (Antedated Aug. 23, 1869)	April 19, 1870
102,179	Same..... Boston, Mass. Folding-chair	April 19, 1870
102,180	Same..... same	April 19, 1870
106,633	Same..... same	Aug. 23, 1870
102,987	Stewart, Charles C., Oneonta, N. Y. Foundry flask-clamp	May 10, 1870
99,795	Stewart, Charles F., Corunna, Mich. Tool for making splints	Feb. 15, 1870
99,367	Stewart, David, assignor to self and Samuel M. Kier, Kittanning, Pa. Manufacture of iron	Feb. 1, 1870
99,363	Same..... Manufacture of iron	Feb. 1, 1870
101,404	Stewart, H. C., and R. T. Bradley, Cincinnati, Ohio. Automatic fire-extinguisher for use on railroad-cars, &c. (Antedated March 5, 1870)	Mar. 29, 1870
3,997	Stewart, H. C., and R. T. Bradley, assignors to William P. Van Deursen and William C. Davis, Cincinnati, Ohio. Fire-extinguisher for use on railroads, &c. (Reissue)	May 24, 1870
103,422	Stewart, Isaac W., New York, N. Y. Diaper-pin	Aug. 16, 1870
109,267	Stewart, James, Washington, D. C. Ruling-machine	Nov. 15, 1870
102,445	Stewart, James F., Friedrich Hinkerman, and James Lamb, assignors to James Lamb and James F. Stewart, Aurora, Ill. Mechanism for transmitting power to lathes and other machinery	April 26, 1870
103,675	Stewart, James T., assignor to Samuel R. Whitlow, Peoria, Ill. Medical compound	May 31, 1870
109,151	Stewart, John, and Charles Wall. (See Wall & Stewart.)	Nov. 8, 1870
103,100	Stewart, John L., Philadelphia, Pa. Machine for filling barrels	May 17, 1870
109,683	Stewart, Scott, Lowell, Mass. Machine for raking and cooking hay	Nov. 29, 1870
103,676	Stewart, Thomas, Philadelphia, Pa. Curtain-fixture	May 31, 1870
103,012	Stewart, Timothy B., Hartford, Conn. Oil-box for car-axles	July 5, 1870
104,658	Stewart, William, Steubenville, Ohio. Apparatus for generating and burning gas	June 21, 1870
103,253	Stewart, William, & Co. (See Ezra C., assignor.)	Aug. 30, 1870
106,885	St. Germain, Camille, Oxford, Mass. Shoemakers' tool	Feb. 1, 1870
99,491	Stickney, Augustin W., and Charles Strong. (See Strong & Stickney.)	May 3, 1870
102,726	Stieren, Hermann, Mason, W. Va., and William A. Nisbit, Natrona, Pa. Apparatus for the production of bromine	May 17, 1870
4,004	Stiger, Augusta M., Brooklyn, N. Y. Combined stocking-supporter and skeleton-waist	Aug. 30, 1870
104,225	Stiles, D. L., Rochester, N. Y. Base-burning parlor cook-stove	May 31, 1870
109,152	Same..... Heating-stove	May 31, 1870
4,067	Stiles, David L., assignor through mesne assignments to John M. French, jr., Rochester, N. Y. Heating-stove..... (Reissue)	June 14, 1870
107,304	Stiles, N. C. (See Ford, Omri C., assignor.)	Nov. 8, 1870
110,087	Stiles, Peter B., and Merrill S. Orton. (See Orton & Stiles.)	May 24, 1870
99,968	Still, John F., West Farms, N. Y. Heating-stove	June 14, 1870
109,776	Same..... Coffee-pot	Nov. 8, 1870
104,789	Still, John W., San Francisco, Cal. Gate-latch..... (Design)	May 24, 1870
103,677	Stillman, Jonathan P., Ames, Albert and Thomas B. (See Carmichael, Alexander, assignor.)	Sept. 13, 1870
107,636	Stillson, Daniel C., Charlestown, Mass. Wrench	Dec. 13, 1870
105,736	Same..... Stench-trap	Feb. 15, 1870
105,322	Stillson, David I. (See Brockett, Leonard, assignor.)	Nov. 29, 1870
	Stilson, Lyman B., assignor to self and John W. Childs, Minneapolis, Minn. Grain harvester and binder. (Antedated Feb. 6, 1870)	June 23, 1870
	Stilson, Lyman B., and James G. Payson, Minneapolis, Minn. Dumping-apparatus	May 31, 1870
	Stilwell, Edwin R., Dayton, Ohio. Feed-water heater and filter	Sept. 20, 1870
	Stilwell, Nicholas, Newark, N. J. Sawing-machine. (Antedated May 24, 1870)	July 26, 1870
	Stilwell, Stephen, Waterloo, N. Y. Slide for extension-tables	July 12, 1870
	Stimers, Alban C., Castleton, N. Y. Rifled cannon. (Antedated July 21, 1870)	
	Stimpson, Edwin B., New York, N. Y. Press for perforating shoe-tips	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Stimson, Earl L., and S. Edward. ( <i>See</i> Appleton, Charles J., assignor.) (Two cases.)	
100,949	Stimson, Lovitt, assignor to the Greedwoods Scythe Company, New Hartford, Conn. Wrapping scythes for transportation.....	Mar. 15, 1870
109,153	Stimson, L. S., deceased, by Harriet N. Stimson, administratrix, assignor through mesne assignments of one-half interest to Nelson F. Libby, Lowell, Mass. Cigar-cutting machine.....	Nov. 8, 1870
106,634	Stine, Adam W., Crestline, Ohio. Window-frame.....	Aug. 23, 1870
	Stineback, Albert. ( <i>See</i> Chadderdon, Edward, assignor.)	
110,169	Stinson, Ralph, Whitesville, Mo. Water-wheel.....	Dec. 13, 1870
100,815	Stirk, William, Fort Wayne, Ind. Combined marker, planter, and cultivator.....	Mar. 1, 1870
109,071	Stirling, Mary A., <i>et al.</i> ( <i>See</i> Samuels, John L., assignor)..... (Reissue.)	
	Stites, George, and William H. Soley. ( <i>See</i> Soley & Stites.)	
105,510	Stitt, James, San Francisco, Cal. Cable-stopper.....	July 19, 1870
	Stitzel, Frederick, Louisville, Ky. Barrel-filler.....	Nov. 8, 1870
99,369	Stivender, Arthur A., Ocala, Fla. Railway water-elevator.....	Feb. 1, 1870
	Stiver, James, and William H. Rosser. ( <i>See</i> Rosser & Stiver.)	
104,075	Stiver, William C., and John S. Williams, Brooklyn, N. Y. Broiler.....	June 7, 1870
104,508	Stivers, Major Joseph W., North Middletown, Ky. Seed-stripper.....	June 21, 1870
99,025	St. James, Clement, Pittsfield, Mass. Thill-coupling.....	Jan. 18, 1870
104,598	St. John, Cornelius, assignor to self and James E. Vanderhill, New York, N. Y. Lamp-shade holder.....	June 28, 1870
101,536	St. John, Garland B., Kalamazoo, Mich. Cultivator. (Antedated April 1, 1870).	April 5, 1870
101,537	Same..... Attachment to seeding-machines.....	April 5, 1870
109,357	St. John, Hiram, Wilton, Conn. Window-fastening.....	Nov. 15, 1870
102,610	St. John, Thomas, Dunbar, Pa. Rock-boring apparatus.....	May 3, 1870
109,268	St. John, William H., and Peter Cartwright, New York, N. Y. Purifying illuminating-gas.....	Nov. 15, 1870
	St. John, William O., and Charles A. Fitch. ( <i>See</i> Fitch & St. John.)	
	Stoakes, John G., and George W. Crabtree. ( <i>See</i> Crabtree & Stoakes.)	
	Stobbs, Alexander, and James Carmac. ( <i>See</i> Carmac & Stobbs.)	
109,964	Stock, Caspar A., New York, N. Y. Drawer-handle.....	Dec. 6, 1870
106,228	Stocker, Charles M., Georgetown, Mass. Feeding-device and presser-foot for sewing-machines.....	Aug. 9, 1870
109,965	Stocking, Roderick F., and Calvin P. Greene, Lawn Ridge, Ill. End-gate for wagons.....	Dec. 6, 1870
109,966	Same..... End-gate for wagons.....	Dec. 6, 1870
106,090	Stockton, Joseph B., Edmonton, Ky. Suspended shelf.....	Aug. 2, 1870
106,423	Stockton, Joseph H., Thompson, Ga. Railway-switch.....	Aug. 16, 1870
107,831	Stockton, Samuel, and John Shepler, Lambertville, N. J. Corpse-preserver.....	Sept. 27, 1870
102,877	Stockton, William, New York, N. Y. Cover for chamber-vessels.....	May 10, 1870
	Stockwell, Albert, and Joshua Hunt. ( <i>See</i> Hunt & Stockwell.)	
	Stockwell, Alden B., administrator. ( <i>See</i> Howe, Elias, jr)..... (Design.)	
103,678	Stockwell, George W., Natchez, Miss. Combination-tool.....	May 31, 1870
105,511	Stockwell, John W., Portland, Me. Preparation of cement for the manufacture of cement pipe.....	July 19, 1870
106,424	Same..... Water-pipe machine.....	Aug. 16, 1870
4,220	Same..... same..... (Reissue.)	Dec. 27, 1870
103,254	Stockwell, Levi W., Akron, Ohio. Sewing-machine.....	May 17, 1870
98,718	Stockwell, Nathan, Ouaquaga, N. Y. Apparatus for feeding swine. (Antedated Dec. 30, 1870).	Jan. 11, 1870
107,117	Stoddard, Henry A., Springfield, Mass. Locomotive ash-pan.....	Sept. 6, 1870
99,026	Stoddard, Isaac H., Ansonia, Conn. Photographic camera.....	Jan. 18, 1870
100,950	Stoddard, J. C., Worcester, Mass. Horse-rake.....	Mar. 15, 1870
107,832	Same..... Horse hay-rake.....	Sept. 27, 1870
98,813	Stoddard, Worden E., Fort Edward, N. Y. Weather-board gauge.....	Jan. 11, 1870
106,425	Stoelker, Otto, Montgomery, Ala. Barber's furniture.....	Aug. 16, 1870
100,210	Stohlmann, Frederick A., Brooklyn, N. Y., and Andrew H. Smith, New York, N. Y., assignors to Frederick A. Stohlmann. Mechanical leech.....	Feb. 22, 1870
101,937	Stokes, John, Springfield, Mass., and Thomas Bennett, Hartford, Conn. Spring-vise for gun-locks.....	April 12, 1870
109,850	Stokes, Joseph, Trenton, N. J. Pile for beams.....	Dec. 6, 1870
102,727	Stokes, Septimus C., Manchester, N. H. Knife-sharpener.....	May 3, 1870
105,274	Stokes, William, New York, N. Y. Suspension paper-clip.....	July 12, 1870
100,085	Stolbrand, C. J., Columbia, S. C. Steam-generator.....	Feb. 22, 1870
110,601	Stoll, Charles, Brooklyn, N. Y. Malt-reservoir.....	Dec. 27, 1870
3,992	Stoll, Charles G. and William, assignors through mesne assignments to William W. Stoll, Brooklyn, N. Y. Machine for separating grain and other materials. (Reissue.)	May 24, 1870
99,027	Stone, Alson A., Shirley, Mass. Die for forming shuttle-tips.....	Jan. 18, 1870
99,028	Same..... Die for forming shuttle-spindle heads.....	Jan. 18, 1870
105,275	Stone, George A., New York, N. Y. Steam-generator.....	July 12, 1870
	Stone, Henry J., <i>et al.</i> ( <i>See</i> Samuels, John L., assignor)..... (Reissue.)	
	Stone, Jabez, and Henry G. Ludlow. ( <i>See</i> Ludlow & Stone.)	
	Stone, Jacob, and John N. Farrar. ( <i>See</i> Farrar & Stone.)	
99,725	Stone, John H., Philadelphia, Pa. Water-cooler.....	Feb. 8, 1870
103,255	Stone, John W., Paris, Tenn. Tobacco-rolling machine.....	May 17, 1870
	Stone, Jonathan. ( <i>See</i> Dunn, John, assignor.)	
103,679	Stone, Melvin, Vermillion, Ohio. Safety-whiffletree.....	May 31, 1870
103,680	Stone, Orrin, Ionia, Mich. Grain-separator.....	May 31, 1870
	Stone, Pardon M. ( <i>See</i> Heptonstall, Charles, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,996	Stone, Peter Jerome, Athens, Pa. Apparatus for cutting grass under water....	Aug. 2, 1870
	Stone, Robert M. ( <i>See</i> Hinman, Milan, assignor.)	
	Stone, William E. ( <i>See</i> Boyden, Pardon, assignor.)	
104,374	Stoner, David, Canton, Ohio. Pumping-apparatus.....	June 14, 1870
109,269	Stoner, Ezra, Greencastle, Pa. Combined harrow and seeder.....	Nov. 13, 1870
105,276	Stoner, Solomon, Canton, Ohio. Horse-power.....	July 12, 1870
106,229	Stopple, Charles W., Houston, Texas. Hay and cotton press.....	Aug. 9, 1870
	Storer, Jacob J., and James D. Whelpley. ( <i>See</i> Whelpley & Storer).....(Six cases.)	
	Same.....same.....(Reissue.)	
	Storer, Jacob J., and James D. Whelpley, assignors to Thomas William Clarke and William S. Dexter, trustees, Boston, Mass. Grinding-mill....(Disclaimer filed)	Mar. 7, 1870
104,226	Storer, John, New York, N. Y. Cataract-mechanism for engines. (Antedated June 3, 1870).....	June 14, 1870
104,659	Same.....Peekskill, N. Y. Stop-motion for steam-engines. (Antedated June 9, 1870).....	June 21, 1870
106,886	Same.....Cornish-engine. (Antedated Aug. 18, 1870).....	Aug. 30, 1870
105,139	Storle, Ole O., North Cape, Wis. Harvester-rake.....	July 5, 1870
	Storm, William Mount, New York, N. Y. Breech-loading fire-arm....(Extension).....	July 6, 1870
	Same.....same.....(Extension).....	July 6, 1870
	Story, Edward, and Christopher S. Benjamin. ( <i>See</i> Benjamin & Story.)	
101,677	Story, George W., Kansas City, Mo. Carpet-stretcher.....	April 5, 1870
105,407	Stouffer, Hiram C., Salem, Ohio. Elevator.....	Mar. 29, 1870
	Stout, Charles W., and William J. Wiggins. ( <i>See</i> Wiggins & Stout.)	
109,072	Stout, George W., assignor to New York Hat-Finishing Company, Newark, N. J. Hat-finishing machine.....	Nov. 8, 1870
101,538	Stout, Robert, Matteawan, N. Y. Horseshoeing tool.....	April 5, 1870
3,914	Stout, Stephen, assignor to O. B. North & Co., New Haven, Conn. Trace-holder. (Reissue).....	April 12, 1870
103,650	Stovall, Philip, Newman, Ga. Spring bed-bottom.....	Oct. 25, 1870
103,945	Stover, Daniel C., Lanark, Ill. Cultivator.....	Nov. 1, 1870
102,060	Stover, Gilbert, Crystal, Mich. Turbine water-wheel.....	April 19, 1870
103,202	Stover, Joel, Richmond, Ind. Apparatus for heating and ventilating buildings..	Oct. 11, 1870
110,399	Stow, Henry M., San Francisco, Cal. Pipe and tube for water and gas.....	Dec. 20, 1870
	Stow Manufacturing Company, S. ( <i>See</i> Brewer, James F., assignor.)	
103,386	Stow, Orson W., Plantsville, Conn. Tinsmiths' shears.....	May 24, 1870
104,076	Same.....Gauge-attachment for tinsmiths' shears.....	June 7, 1870
	Stowe, Charles P., et al. ( <i>See</i> Monroe, Nathaniel, assignor.)	
103,681	Stowe, James G., Providence, R. I. Machine for making horseshoes.....	May 31, 1870
106,091	Stowe, John, Lawrence, Mass. Apparatus for the treatment of fracture of the lower jaw.....	Aug. 2, 1870
4,517	Stowell, Barna T., Quincy, Ill. Hoe.....(Design).....	Dec. 13, 1870
	Stowell, Thomas N. ( <i>See</i> Sawtelle, Zephaniah E., assignor.)	
106,969	Straight, Albert J., Richland Centre, Wis. Axle for vehicles.....	Aug. 30, 1870
	Straight, John A., and George M. Hopkins. ( <i>See</i> Hopkins & Straight).....(Three cases.)	
104,660	Strain, Edwin, Newton, Mass. Needle for sewing-machine.....	June 21, 1870
106,092	Same.....same.....	Aug. 2, 1870
4,200	Strait, Joel V., Litchfield, Ohio. Gearing for mowing-machines.....(Reissue).....	Dec. 13, 1870
99,029	Stranahan, George W., Westport, N. Y. Washing-machine.....	Jan. 13, 1870
98,814	Strater, Herman, jr., Boston, Mass. Water-closet valve.....	Jan. 11, 1870
	Strattan, Stephen S. ( <i>See</i> Ridge, Joseph, assignor.)	
105,605	Stratton, Charles M. and Oscar G., Greenfield, Mass. Power-press.....	July 19, 1870
100,463	Stratton, Edwin A. and Charles M., Greenfield, Mass. Spirit-level.....	Mar. 1, 1870
	Stratton, Joseph L., and Milton Bowker. ( <i>See</i> Bowker & Stratton.)	
	Stratton, Oscar G., and Baxter B. Noyes. ( <i>See</i> Noyes & Stratton.)	
108,405	Straub, Henry P., Cincinnati, Ohio. Hanging mill-stones.....	Oct. 18, 1870
103,101	Straus, Jacob, St. Louis, Mo. Side-saddle tree.....	May 17, 1870
104,077	Strausbaugh, Jacob, jr., Tiffin, Ohio. Sawing-machine.....	June 7, 1870
110,602	Strauss, Arnold, New York, N. Y. Safety-attachment for railway-trucks.....	Dec. 27, 1870
109,467	Strauss, Julius, New York, N. Y. Filter for wine-sirup, &c.....	Nov. 22, 1870
	Strayer, George, and Jesse C. Coleman. ( <i>See</i> Coleman & Strayer.)	
110,083	Street, Augustus F., Zanesville, Ohio. Car-coupling.....	Dec. 13, 1870
102,181	Street, Edwin, East Haven, Conn. Metal-capped cork.....	April 19, 1870
102,446	Street, George W., Brooklyn, N. Y. Skate-fastening.....	April 26, 1870
102,447	Street, John G., Brooklyn, N. Y. Machine-beltting.....	April 26, 1870
98,893	Street, Richard, Albany, N. Y. Closing leaks in hose, pipes, and tubes.....	Jan. 18, 1870
106,426	Same.....Clasp for lightning-rods.....	Aug. 16, 1870
102,878	Street, William Tell, Frankford, Pa. Bathing-apparatus.....	May 10, 1870
106,887	Street, Zadok, Salem, Ohio. Stock-car.....	Aug. 30, 1870
106,888	Same.....same.....	Aug. 30, 1870
	Streeter, Alvin, and Irving E. Weston. ( <i>See</i> Weston & Streeter.)	
104,227	Streeter, Leroy M., Oshkosh, Wis. Clothes-drier.....	June 14, 1870
109,073	Streeter, Sumner F., Bernardstown, Mass. Corner-trowel.....	Nov. 8, 1870
105,383	Streeter, William, Rochester, N. Y. Permutation-lock.....	July 12, 1870
104,078	Streett, James R., assignor to self and James Vermillion, Washington, D. C. Blow-pipe.....	June 7, 1870
107,637	Stribling, Uriah B., Madison, Ind. Method of setting posts.....	Sept. 20, 1870
106,292	Stricker, George, Catawissa, Pa. Shifting buggy-top.....	Aug. 9, 1870
109,468	Stringer, Hugh A., and Alexander F. Ward, Chatham, Canada. Harvester-rake.....	Nov. 22, 1870
4,173	Strode, James E., Hillsborough, Ill. Ring and buckle.....(Design).....	June 21, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Strohmenger, Charles, and Henry Manneck. ( <i>See Manneck &amp; Strohmenger.</i> )	
4,051	Strong, Abner D., Ashtabula, Ohio. Vinegar-apparatus. .... (Reissue).	June 28, 1870
109,270	Strong, Charles, and Augustin W. Stickney, Lebanon, N. H. Steam-engine....	Nov. 15, 1870
107,539	Strong, Joel, College Hill, Ohio. Broom-handle .....	Sept. 20, 1870
101,938	Strong, R. H., assignor to self, J. F. Boyd, and E. F. Greene, Galesburgh, Ill. Saw-filing machine .....	April 12, 1870
102,879	Stroud, Bryant F., Marshall, Texas. Baling-press .....	May 10, 1870
101,178	Stroud, William D., Oshkosh, Wis. Combined seeder and cultivator .....	Mar. 22, 1870
101,939	Same.....Seed planter and cultivator.....	April 12, 1870
102,611	Same.....Hand corn-planter.....	May 3, 1870
102,612	Strouse, Seligman H. and Joseph, New York, N. Y. Shirt .....	May 3, 1870
103,795	Struck, Charles E., assignor to self and James Twamley, New York, N. Y. Blind-fastener .....	May 31, 1870
	Strunk, Diedrick, and Thomas Byrne. ( <i>See Byrne &amp; Strunk.</i> )	
109,271	Strunk, William, Nettle Creek, Ohio. Window-shade.....	Nov. 15, 1870
109,074	Stuart, Addison A., assignor to self and J. D. Eddy, Plainfield, Iowa. Latch ...	Nov. 8, 1870
99,969	Stuart, David, Philadelphia, Pa. Cooking-stove .....	Feb. 15, 1870
99,726	Stuart, David, and Louis Bridge, assignors to Stuart, Peterson & Co., Philadelphia, Pa. Feeder for fire-place heaters. (Antedated Aug. 9, 1870) .....	Feb. 8, 1870
4,320	Same.....Portable range .....	Aug. 30, 1870
108,736	Same.....Cooking-range .....	Oct. 25, 1870
110,400	Same.....Cooking-stove .....	Dec. 20, 1870
3,911	Stuart, David, and Louis Bridge, assignors to David Stuart and Richard Peterson, Philadelphia, Pa. Cooking-stove. (Antedated March 1, 1870) .....	Mar. 15, 1870
4,009	Same.....Screen for base-burning fire-place heaters. (Division B, reissue) ..	May 31, 1870
110,305	Same.....Cooking-stove .....	Dec. 20, 1870
	Stuart, David, <i>et al.</i> ( <i>See Bridge, Lewis, assignor.</i> )	
	Stuart, Henri L. ( <i>See Boynton, John F., assignor.</i> ) .....	
	Same.....( <i>See Wiard, Norman, assignor.</i> ) .....	
107,833	Stuart, James, England. Separating animal from vegetable fibers. (Patented in England Aug. 6, 1869) .....	Sept. 27, 1870
	Stuart, James Blee. ( <i>See Chapman, Joseph L., assignor.</i> )	
106,230	Stuart, Leverett W., Narrowsburgh, N. Y. Horse hay-fork.....	Aug. 9, 1870
	Stuart, Reuben, <i>et al.</i> ( <i>See Hanchett, Daney &amp; Stuart.</i> )	
	Stuart, William, and George G. Lobdell. ( <i>See Lobdell &amp; Stuart.</i> )	
106,231	Stuart, William George, assignor to John W. Trafton, Springfield, Mass. Water-closet .....	Aug. 9, 1870
102,061	Stuart, William M., assignor to self, Austin O. Whitcomb, and William S. and Robert H. Holmes, St. Clair, Mich. Roofing-compound.....	April 19, 1870
102,880	Stuck, Levi, Bryan, Ohio. Stove-grate .....	May 10, 1870
107,118	Stukey, Daniel, Lancaster, Ohio. Harvester-cutter .....	Sept. 6, 1870
	Stull, Lewis. ( <i>See Rees, Edwin, assignor.</i> )	
110,603	Stumpf, Theodore F., New York, N. Y. Pocket-brush .....	Dec. 27, 1870
103,102	Stuntz, Stephen S., Jamestown, N. Y. Traction-machine for plows .....	May 17, 1870
107,119	Sturges, James D., Chicago, Ill. Bridge-gate .....	Sept. 6, 1870
98,719	Sturges, R. C., Boston, Mass. Bearing for rudder-heads.....	Jan. 11, 1870
	Same.....( <i>See Meiggs, George F., assignor.</i> )	
106,635	Sturneyk, Frederick, St. Paul, Minn. Railway-car axle.....	Aug. 23, 1870
100,211	Sturtevant, Benjamin F., Jamaica Plain, Mass. Heating and ventilating apparatus.	Feb. 22, 1870
100,212	Same.....Grain-drier .....	Feb. 22, 1870
100,235	Same.....same.....	Feb. 22, 1870
100,236	Same.....Pressure blower-wheel.....	Feb. 22, 1870
100,237	Same.....same.....	Feb. 22, 1870
100,238	Same.....Hot-air blower .....	Feb. 22, 1870
100,239	Same.....Pressure-blower.....	Feb. 22, 1870
100,240	Same.....Compound air-heater and steam-condenser .....	Feb. 22, 1870
100,241	Same.....same.....	Feb. 22, 1870
100,242	Same.....same.....	Feb. 22, 1870
100,243	Same.....Uniting tubes to tube-sheets.....	Feb. 22, 1870
102,062	Same.....West Roxbury, Mass. Blower.....	April 19, 1870
103,063	Same.....Fan-blower .....	April 19, 1870
107,305	Sugden, James, Pittsburgh, Pa. Machine for bending rake-teeth .....	Sept. 13, 1870
103,632	Sullivan, Cornelius, Boston, Mass. Book-rest .....	May 31, 1870
103,154	Sullivan, George L., and Edward Lippincott, Chicago, Ill. Relishing-machine for tenoning sash. (Antedated Oct. 29, 1870) .....	Nov. 8, 1870
102,448	Sullivan, Thomas, Corning, N. Y. Tire-upsetting machine.....	April 26, 1870
3,887	Sullivan, Timothy J., Albany, N. Y. Safe..... (Reissue) ..	Mar. 22, 1870
103,683	Same.....Safe and vault .....	May 31, 1870
105,512	Same.....Secretary-safe.....	July 19, 1870
110,170	Sullivan, William W., Liberty, Ind. Fence.....	Dec. 13, 1870
110,604	Sulter, Frederick, Cleveland, Ohio. Steam-boiler .....	Dec. 27, 1870
100,464	Sulzbacher, M., New York, N. Y. Sofa-bedstead.....	Mar. 1, 1870
105,513	Summers, Lucius P., assignor to P. and F. Corbin, New Britain, Conn. Device for inserting the pintles or pins in hinges.....	July 19, 1870
109,851	Same.....Machine for countersinking the holes in butt-hinges.....	Dec. 6, 1870
101,784	Sunderland, L. A., Madison, Ohio. Milk-can .....	April 12, 1870
3,818	Suplee, Hannah G., San Francisco, Cal. Needle for sewing-machines. (Division A, reissue) .....	Feb. 1, 1870
3,819	Same.....Needle for sewing-machine..... (Division B, reissue) ..	Feb. 1, 1870
103,737	Same.....Needle. (Antedated Oct. 15, 1870) .....	Oct. 25, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,613	Sureus, Jacob, and W. N. Behrens, assignors to Archibald T. Finn, Newark, N. J. Hat-blocking machine.	May 3, 1870
101,539	Sursa, James W., San Leandro, Cal. Gang-plow.	April 5, 1870
101,560	Same. San Francisco, Cal. Gang-plow beam.	Sept. 20, 1870
109,469	Sutliff, Warren, Burns, Wis. Harvester-rake.	Nov. 22, 1870
	Sutterlin, J. B., <i>et al.</i> (See Lowe, John K., assignor). (Reissue.)	
103,387	Sutton, Charles T., Brooklyn, N. Y. Table.	May 24, 1870
109,154	Sutton, Delay F., Toledo, Ohio. Countersink.	Nov. 8, 1870
105,277	Sutton, James H., Homersdale, Pa. Hydraulic seal.	July 12, 1870
99,370	Sutton, John Reid, Brooklyn, N. Y. Ram for packing tobacco.	Feb. 1, 1870
	Sutton, Joseph. (See Meller, William, assignor.)	
107,120	Sutton, Robert, New Castle, Del. Propeller for steam-vessels.	Sept. 6, 1870
101,058	Suwerkrop, Edward A., Washington, D. C. Emery-wheel clamp.	Mar. 22, 1870
110,491	Snydam, John H., Atwater, Minn. Wheel-plow.	Dec. 20, 1870
105,737	Svensson, Carl L., assignor to J. Q. C. Searle, Topeka, Kans. Heating-stove. (Antedated July 21, 1870).	July 26, 1870
	Swab, Jonas, and Emanuel Forney. (See Forney & Swab.)	
107,423	Swain, Byron G., Colden, N. Y. Curd-agitator.	Sept. 13, 1870
102,614	Swain, Charles, Laconia, N. H. Oven.	May 3, 1870
98,720	Swain, Edward Augustus, New York, N. Y. Adding-machine.	Jan. 11, 1870
106,294	Swallow, John E., Hagerstown, Md. Wheel-plow.	Aug. 9, 1870
109,684	Same. same.	Nov. 29, 1870
99,970	Swan, James, Seymour, Conn. Machine for grinding and polishing bits.	Feb. 15, 1870
100,816	Same. Machine for bending the lips of auger-bits.	Mar. 15, 1870
103,103	Swan, John A., North Anson, Me. Bridle-bit.	May 3, 1870
	Swan, Oswald C., <i>et al.</i> (See Rucker, Swan & Rucker.)	
103,684	Swan, Thomas, Manlius, N. Y. Rotary pump.	May 31, 1870
	Swan, Wallace W. (See Hackett, George H., assignor.)	
103,522	Swann, William W., Richmond, Va. Over-shoe.	May 24, 1870
	Swartz, Adelia R. (See Rosecranz, Josiah, assignor.)	
108,203	Swartz, Daniel M., Lewisburgh, Pa. Egg-beater.	Oct. 11, 1870
108,204	Swartz, Hiram B., Milton, Ohio. Sash-holder.	Oct. 11, 1870
110,306	Swasey, Isaac N., Yonkers, N. Y. Billiard-table.	Dec. 20, 1870
105,514	Swasey, William F., San Francisco, Cal. Condiment or relish.	July 19, 1870
107,561	Swathel, Wilbur F., assignor to self and Walter W. Woodruff, Mount Carmel, Conn. Machine for turning the heads of bolts.	Sept. 20, 1870
101,059	Sweeney, Thomas, Boston, Mass. Water-meter.	Mar. 22, 1870
108,064	Sweeny, Peter, New York, N. Y. Lantern.	Oct. 4, 1870
108,205	Same. Adjustable tuyere.	Oct. 11, 1870
99,727	Sweet, D. F., assignor to self and L. A. Leighton, Otsego, Mich. Automatic water cut-off.	Feb. 8, 1870
102,615	Sweet, Eli, Whitney's Point, N. Y. Mold for artificial teeth.	May 3, 1870
	Sweet, Salmon, and Reuben P. Buttles. (See Buttles & Sweet.)	
105,738	Sweet, William A., Syracuse, N. Y. Heating-furnace.	July 26, 1870
	Sweet, W. F., and Leroy Boynton. (See Boynton & Sweet.)	
102,064	Sweetland, Anthony B., assignor to self and James Daley, Fitchburgh, Mass. Refrigerator.	April 19, 1870
100,465	Sweetland, Frederick B., assignor to George H. and Joseph S. Sanborn, New Haven, Conn. Paper-cutting machine.	Mar. 1, 1870
108,534	Sweetland, Jerome B., Pontiac, Mich. Device for holding open doors.	Oct. 13, 1870
109,076	Sweezy, George P., Riverhead, N. Y. Adjustable coat-pattern.	Nov. 8, 1870
102,616	Sweigert, George D., assignor to self and Samuel Eshleman, Martio Township, Pa. Bag-holder.	May 3, 1870
	Swenson, John C., and Michel Lewes. (See Lewes & Swenson.)	
104,079	Sweny, Monroe, Warren County, Ohio. Sawing-machine.	June 7, 1870
	Sweett, George W., <i>et al.</i> (See Hawks, Elizabeth, assignor). (Disclaimer.)	
103,272	Sweett, Greenleaf L., and Joseph P. Lockey, Leominster, Mass. Molded carriage-top.	Nov. 15, 1870
4,212	Swickard, Noah, assignor through mesne assignments to Nicholas E. Phillips and John W. Cline, Galva, Ill. Wagon and car unloading apparatus. (Reissue.)	Dec. 20, 1870
101,179	Swift, Albert Brigham, Brooklyn, N. Y. Mode of connecting architectural toy-blocks.	Mar. 22, 1870
	Swift, Frank, and W. W. Huntley. (See Huntley & Babcock, assignors.)	
109,155	Swift, Frank, and Miles Standish, Hudson, Mich. Grain-separator.	Nov. 8, 1870
100,687	Swift, George W., assignor to self and E. G. Graham, Memphis, Tenn. Hay and cotton press.	Mar. 8, 1870
108,065	Swigart, Nathan, Richfield, Ohio. Corn-planter.	Oct. 4, 1870
106,636	Swindell, William, Allegheny City, Pa. Stack for puddling, boiling, and other furnaces.	Aug. 23, 1870
106,427	Swineboard, George W., Bolivar, Tenn. Press for hay, cotton, &c.	Aug. 16, 1870
99,030	Swineford, Henry, Millinburg, Pa. Bedstead-fastener.	Jan. 18, 1870
99,492	Same. Scaffold.	Feb. 8, 1870
106,293	Switzer, George, Washington, D. C. Attaching and detaching horses from vehicles.	Aug. 9, 1870
110,511	Swogger, Alfred D., Worth, Pa. Bag-holder.	Dec. 27, 1870
	Swope, Graybill B. (See Dittman, Casper, assignor.)	
99,031	Sykes, E. L., Okolona, Miss. Cotton-planter.	Jan. 18, 1870
99,493	Sykes, William, England. Tunneling rivers.	Feb. 1, 1870
3,946	Symmes, John Cleves, assignor to William N. Ely, trustee, Stratford, Conn. Breech-loading fire-arm. (Reissue.)	May 3, 1870
107,834	Taber, Church, Craftsbury, Vt. Milk-pail.	Sept. 27, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,835	Taber, Church, Craftsbury, Vt. Lantern .....	Sept. 27, 1870
107,836	Same.....Paper-file .....	Sept. 27, 1870
103,388	Taber, Freeman Augustus, assignor to Thomas Scott Williams and Philip Sidney Page, Boston, Mass. Manufacture of tubular candles.....	May 24, 1870
	Taber, Freeman Augustus, and Thomas Scott Williams. (See Williams & Taber.) (Four cases.)	
101,060	Taber, J. Oscar, Salem, Ohio. Combined mower and hedge-trimmer. (Antedated March 16, 1870) .....	Mar. 22, 1870
103,796	Same.....Harvester-dropper .....	May 31, 1870
104,080	Same.....Crank-wrist for harvesting-machines .....	June 7, 1870
104,790	Taft, Oliver, Whitestone, N. Y. Floor-clamp. (Antedated June 16, 1870) .....	June 28, 1870
98,644	Taft, George C., Worcester, Mass. Wrench .....	Jan. 4, 1870
99,494	Same.....Twine-cutter. (Antedated Jan. 25, 1870) .....	Feb. 1, 1870
107,121	Same.....Nail-extractor .....	Sept. 6, 1870
108,738	Same.....Wrench .....	Oct. 25, 1870
99,495	Taft, George C., assignor to Thomas H. Dodge, Worcester, Mass. Machine for drilling metals .....	Feb. 1, 1870
3,918	Taft, George C., assignor to Loring Coes, Worcester, Mass. Wrench. (Reissue) ..	April 12, 1870
4,003	Taft, George C., assignor to Thomas B. Doolittle, Worcester, Mass. Twine-cutter .....	May 31, 1870
	(Reissue) ..	April 5, 1870
101,678	Taft, Horatio N., Sag Harbor, N. Y. Suspension bath-tent .....	Oct. 13, 1870
103,406	Taft, Joseph, Rockville, Conn. Table .....	May 3, 1870
102,617	Taft, Owen W., assignor to self and Ernest Mitchell, New York, N. Y. Carving-knife .....	Dec. 13, 1870
4,518	Taft, Royal C., William B. Weeden, and James W. Taft, Providence, R. I. Woven fabric.....(Design) ..	Dec. 13, 1870
4,519	Same.....same .....	Dec. 13, 1870
4,520	Same.....same .....	Dec. 13, 1870
4,532	Same.....same .....	Dec. 20, 1870
101,785	Taft, Stephen Clarendon, Mendon, Mass. Wood-pulp machine .....	April 12, 1870
	Taft, S. Newell, and Charles W. Gilbert. (See Bleakie, Robert, assignor.)	
107,978	Taft, Timothy T., assignor to Aurin Wood and Joseph F. Light, Worcester, Mass. Shaft-coupling .....	Oct. 4, 1870
	Taggart, John, Boston, Mass. Excavating-scoop .....	May 19, 1870
104,791	Tait, William C., Alexandria, La. Medical compound .....	June 28, 1870
103,206	Talbot, Freeman, Cleveland, Minn. Sleigh-lock .....	Oct. 11, 1870
99,496	Talbot, George W., Providence, R. I. Dye for coloring wool .....	Feb. 1, 1870
4,023	Talbot, George W., assignor to self and Albert Knight, Providence, R. I. Dye for coloring wool and other fibrous materials.....(Reissue) ..	June 7, 1870
107,306	Talbot, John G., Sloansville, N. Y. Churn .....	Sept. 13, 1870
100,086	Talcott, E. P., Blair, Nebr. Steam-wagon .....	Feb. 22, 1870
	Talcott, Samuel C., and Horatio J. Noyes. (See Noyes & Talcott.)	
	Tallman, Esek, and Nicholas G. Hoxsie, administrators. (See Hoxsie, David K.) (Two cases.)	
108,845	Tandy, William M., Carrollton, Ky. Compound for cleaning and preserving the teeth and gums .....	Nov. 1, 1870
	Tanite Company. (See Wallace, Abijah, assignor) .....	
100,338	Tannatt, Joshua F., Springfield, Mass. Calendar .....	Mar. 1, 1870
104,061	Tanner, George, Freetown, N. Y. Cow-tail holder .....	June 21, 1870
103,140	Tanner, George W., and F. D. Bliss, Providence, R. I. Cigar-wrapping machine ..	July 5, 1870
105,859	Same.....Cigar-machine .....	July 26, 1870
106,232	Tapley, Jesse F., Springfield, Mass. Photograph-album .....	Aug. 9, 1870
102,449	Taplin, Alvin, assignor to Bristol Brass and Clock Company, Somerville, Mass. Lamp-burner .....	April 26, 1870
102,728	Same.....Forestville, Conn. Lamp-burner .....	May 3, 1870
	Tappan, John G. (See Cooper, Almond F., assignor.)	
108,207	Tappey, William H., William C. Lumsden, and Alexander Steel, Petersburg, Va. Shuck-hackling machine .....	Oct. 11, 1870
105,739	Tarbox, Ephraim, Charlestown, Mass. Velocipede .....	July 26, 1870
102,618	Tarbox, Levi B., Colliersville, N. Y. Corn-planter .....	May 3, 1870
98,894	Tarr, John Blake, Fair Haven, Mass. Casting cannon. (Antedated Jan. 15, 1870) ..	Jan. 18, 1870
98,895	Same.....Locomotive-car wheel. (Antedated Jan. 15, 1870) ..	Jan. 18, 1870
104,792	Same.....Street-car wheel. (Antedated June 18, 1870) ..	June 28, 1870
110,307	Same.....Mold for casting under-pressures .....	Dec. 20, 1870
	Tarr, Robert, jr., and Thaddeus F. Griffin. (See Griffin & Tarr.)	
	Tash, Wiley, and A. A. Rhoades. (See Rhoades & Tash.)	
	Tash, William. (See Austin, Jacob M., assignor.)	
103,685	Tasker, Stephen P. M., Philadelphia, Pa. Device for cutting off metallic tubes ..	May 31, 1870
105,860	Same.....Chuck .....	July 26, 1870
105,861	Same.....Die-stock .....	July 26, 1870
106,235	Same.....Machine for bending tube-skelps .....	Aug. 9, 1870
	Same.....(See Wendell, Isaac P., assignor) .....	
4,154	Tasker, Stephen P. M., assignor to Morris, Tasker & Co., Philadelphia, Pa. Trade-mark .....	June 14, 1870
	(Design) ..	
	Tasker, Stephen P. M., and Isaac P. Wendell. (See Wendell & Tasker.)	
	Tate, Isaac C., and Peter M. Gallae. (See Gallae & Tate.)	
105,862	Tate, William J., assignor to William A. Drown & Co., Philadelphia, Pa. Mechanism for retaining, adjusting, and sewing parasols .....	July 26, 1870
108,208	Tate, William J., assignor to self and Henry R. Mitchell, Philadelphia, Pa. Press .....	Oct. 11, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,940	Tatham, Benjamin, New York, N. Y. Regulating-power conveyed by friction-surfaces	April 12, 1870
99,723	Tatro, Joseph A., Hartford, Conn. Process of treating petroleum	Feb. 8, 1870
3,867	Same.....same.....(Reissue)	Mar. 1, 1870
106,233	Same.....Refining petroleum	Aug. 9, 1870
102,182	Tattershall, Richard, Beloit, Wis. Spring bed-bottom	April 19, 1870
101,395	Taveau, Augustin L., Chaptico, Md. Steam-plow	Mar. 29, 1870
101,540	Same.....Revolving sulky harrow and seeder combined	April 5, 1870
3,996	Taylor, Annie Ellen, assignor to Henry Taylor, Philadelphia, Pa. Shawl-mantle.....(Design)	April 26, 1870
3,997	Same.....Shawl-mantle.....(Design)	April 26, 1870
101,061	Taylor, A. P., assignor to self and George R. Clark, Darien, N. Y. Sharpening harvester-knives	Mar. 29, 1870
106,428	Taylor, Asher S., San Francisco, Cal. Beverage or champagne-mead	Aug. 16, 1870
109,156	Taylor, Benjamin Van Campen, Newark, N. J. Garment-holder	Nov. 8, 1870
102,988	Taylor, Cebra L., Norwich, Conn. Toy-hoop	May 10, 1870
106,889	Taylor, Cebra L., and George C. Setchell, Greenville, Conn. Combined furnace and tea-kettle	Aug. 30, 1870
102,065	Taylor, Charles, McKeesport, Pa. Saw-mill	April 19, 1870
108,946	Taylor, David H., Westfield, N. Y. Finishing and bleaching handles, &c.	Nov. 1, 1870
	Taylor, Day & Co. (See Prushaw, Thomas H., assignor).....(Two cases.)	
100,466	Taylor, Edward L., assignor through mesne assignments to William C. Goodwin, Hartford, Conn. Toy	Mar. 1, 1870
101,541	Taylor, Esau D., assignor to self and David Cohn, Hornellsville, N. Y. Nut-lock plate	April 5, 1870
107,562	Taylor, Esau D., and William Rude, Hornellsville, N. Y. Machine for breaking hides and working leather	Sept. 20, 1870
	Taylor, Franklin, and Thomas E. Chandler. (See Chandler & Bartholomew, assignors.)	
	Taylor, Gabriel A. (See Clarke, Richard T., assignor.)	
103,523	Taylor, George, New York, N. Y. Faucet	May 24, 1870
98,815	Taylor, George E., Philadelphia, Pa. Roofing-tongs	Jan. 11, 1870
	Taylor, George L., and Dwight Holland. (See Fiske, Henry G., assignor.)	
105,863	Taylor, George Oscar, Hamilton, Va. Railway-rail splice	July 26, 1870
110,308	Taylor, George W., and Walter P. Jenney, Fair Haven, Mass. Lamp-chimney. (Antedated Dec. 8, 1870)	Dec. 20, 1870
	Same.....(See Jenney & Taylor.)	
103,939	Taylor, Gilbert F., New York, N. Y. Gearing for carpet-sweeping machines	June 7, 1870
106,429	Same.....Gear for carpet-sweeping machines	Aug. 16, 1870
	Taylor, H. H., and C. Aultman. (See Allonas, Joseph, assignor.)	
99,971	Taylor, Harrison H., and George H. Graham, Rochester, N. Y. Toasting-fork. (Antedated Dec. 21, 1870)	Feb. 15, 1870
102,619	Taylor, Homer, Montreal, Canada. Apparatus for the combustion of petroleum and other hydrocarbon liquids	May 3, 1870
105,013	Taylor, James C., Trenton, N. J. Corpse-preserver	July 5, 1870
	Taylor, John, et al. (See Martin & Offineer, assignors.)	
101,941	Taylor, John L., New York, N. Y. Suspensory bandage	April 12, 1870
	Taylor, Joseph E., et al. (See Pepper, Daniel Webster, assignor.)	
104,081	Taylor, Joseph M., Dublin, Ind. Scaffold-bracket	June 7, 1870
	Taylor, Lemuel, and James C. Richardson. (See Richardson & Taylor.)	
107,424	Taylor, Lewis R., Clark Township, Ind. Cider-mill	Sept. 13, 1870
	Taylor, Martin, and Archibald H. Crozier. (See Crozier & Taylor.)	
107,735	Taylor, Peter C., San Antonio, Texas. Kiln	Sept. 27, 1870
100,467	Taylor, P. H., New Orleans, La. Label for cotton-bales	Mar. 1, 1870
4,521	Taylor, Richard Henry, Lincoln, Va. Plow-share	Dec. 13, 1870
104,375	Taylor, Robert R., assignor to self, Jeremiah H. Boone, Jonathan M. Heller, and C. B. Bertelette, Reading, Pa. Railway-track clearer	June 14, 1870
101,180	Taylor, Samuel G., Baltimore, Md. Coffee-cleaner	Mar. 22, 1870
109,777	Taylor, Samuel H., assignor to self and Le Grand Parker, Jacksonville, Ill. Brick-machine	Nov. 29, 1870
109,778	Same.....Brick-mold	Nov. 29, 1870
106,741	Taylor, Samuel T., New York, N. Y. Gauge for cutting bias pieces of cloth	Aug. 23, 1870
107,122	Taylor, Simeon, Brighton, Mass. Reed-organ bellows-action	Sept. 6, 1870
103,526	Taylor, Sylvester J., Rome, N. Y. Combined hay-rake and tedder	May 24, 1870
	Same.....(See Butterfield, Spicer R., assignor.)	
101,942	Taylor, Thomas, assignor to Henry Disston, Philadelphia, Pa. Method of manufacturing circular saws	April 12, 1870
101,181	Taylor, Thomas M., New York, N. Y. Coffin	Mar. 22, 1870
104,599	Taylor, Thomas M., assignor to the Meriden Britannia Company, New York, N. Y. Lifting-handle for coffins, &c.	June 28, 1870
103,686	Taylor, William, Lowell, Mass. Stove-pipe damper	May 31, 1870
	Taylor, William B., and George A. Blake. (See Blake & Taylor.)	
	Taylor, William B. S., New York, N. Y. Flexible tubing for illuminating-gas.....(Disclaimer filed)	Dec. 27, 1870
108,739	Taylor, William H., Baldwinsville, N. Y. Harness-hook	Oct. 25, 1870
109,358	Taylor, William M., Newberry, Ohio. Spring for railway-car trucks	Nov. 15, 1870
110,605	Taylor, William Z., assignor to self and John R. King, Burlington, Iowa. Grain-register	Dec. 27, 1870
	Taynton, James, and Lewis Y. Ketcham. (See Ketcham & Taynton.)	
108,209	Teachout, Albert P., Madison, Ohio. Water-wheel	Oct. 11, 1870
105,515	Teal, Daniel E., New Lisbon, N. Y. Construction of chairs	July 19, 1870
105,516	Same.....same	July 19, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,517	Teal, Daniel E., New Lisbon, N. Y. Construction of chairs.....	July 19, 1870
99,497	Teal, Theodore D., Philadelphia, Pa. Paint for ships' bottoms. (Antedated Jan. 24, 1870) .....	Feb. 1, 1870
105,997	Teal, William, Rochester, N. Y. Planing-machines.....	Aug. 2, 1870
105,384	Teamer, William, Evansville, Ind. Stove-grate.....	July 12, 1870
191,679	Teats, Herman, Ann Arbor, Mich. Composition for cleaning plate and glass.....	April 5, 1870
101,542	Teed, John, Reading, Pa. Counter-knife.....	April 5, 1870
109,967	Teed, Lorenzo P., Mechanicsburgh, Pa. Horse-power.....	Dec. 6, 1870
	Teel, William S. (See Jones, James A., assignor.)	
104,662	Te Gantvoort, Jacobus A. H., Waupun, Wis. Bread-making apparatus .....	June 21, 1870
100,688	Tegetthoff, Frank C., Cleveland, Ohio. Roofing compound .....	Mar. 8, 1870
100,639	Tellier, Charles, assignor to Leopold Bouvier, France. Manufacture of ice, and cooling air, liquids, &c.....	Mar. 8, 1870
103,389	Temme, Christian, St. Louis, Mo. Cooking-stove.....	May 24, 1870
101,543	Temple, James, assignor to self, William, and John Temple, Bellefonte, Pa. Car-coupling .....	April 5, 1870
101,182	Temple, John F., Chicago, Ill. Machine for making pump-buckets. (Antedated March 16, 1870) .....	Mar. 22, 1870
107,979	Templeton, John Stewart, Scotland. Mechanism for operating comb-boards.....	Oct. 4, 1870
105,606	Templeton, Nicholas J., Cincinnati, Ohio. Bung-cutter.....	July 19, 1870
101,680	Ten Eyck, Edgar C., West Meriden, Conn. Tag-holder.....	April 5, 1870
107,307	Ten Eyck, Isaac, and John O. Reilley, said Reilley assignor to said Ten Eyck, New York, N. Y. Cigar-machine .....	Sept. 13, 1870
	Terfloth, Bernard, and Solomon Jones. (See Jones & Terfloth.)	
4,052	Ter Hoeven, Dirk Adreaan, Philadelphia, Pa. Fertilizer. (Division A, reissue) ..	June 28, 1870
4,053	Same..... Manufacture of fertilizers .....	June 28, 1870
	Terhune, Thomas and P. O. (See Achenbach, John R., assignor.)	
110,171	Terrel, Enoch P., West Liberty, Ohio. Shuttle-operating mechanism for looms.....	Dec. 13, 1870
101,183	Terrell, Clark M., Oscaloosa, Iowa. Hay gatherer and shocker.....	Mar. 22, 1870
108,066	Terrell, Wales, Ansonia, Conn. Tongs for forging the arms on fifth-wheels.....	Oct. 4, 1870
107,563	Terry, Benjamin C., Keyport, N. J. Wind-wheel.....	Sept. 20, 1870
107,837	Terry, George B., Pittsford, N. Y., and Warren G. Hawle, Gorham, N. Y. Car-coupling .....	Sept. 27, 1870
105,697	Terry, Henry, Waterbury, Conn. Earth chamber-pail.....	July 19, 1870
106,234	Terry, Jabez C., Springfield, Conn. Book-binding.....	Aug. 9, 1870
107,123	Terry, James jr., Terryville, Conn. Trunk-lock.....	Sept. 6, 1870
108,651	Terry, Robert, and Frederick W. Hafkemeyer, Chicago, Ill. Carpet-cleaner.....	Oct. 25, 1870
3,985	Terry, Silas B., assignor through mesne assignments to Silas B. Terry, jr., and Daniel S. Robeson, Terryville, Conn. Machine for making paper boxes. (Re-issue) .....	May 17, 1870
99,258	Terry, William A., Bristol, Conn. Clock-calendar .....	Jan. 25, 1870
109,685	Same..... Water-wheel.....	Nov. 29, 1870
4,213	Same..... Calendar-clock .....	Dec. 20, 1870
100,690	Terwilliger, H. G., Scranton, Pa. Grooving-chisel. (Antedated Feb. 23, 1870) ..	Mar. 8, 1870
110,209	Tetro, Waldy, assignor to Union Nut Company, Northampton, Mass. Cant-book.....	Dec. 20, 1870
3,878	Thackara, Benjamin, assignor to Miskey, Merrill & Thackara, Philadelphia, Pa. Shade for gas or lamp burners. (Antedated Oct. 1, 1869)..... (Design) ..	Mar. 1, 1870
104,900	Thalhofer, Andrew, South Bend, Ind. Device for operating awnings.....	June 28, 1870
104,376	Tharp, Benjamin H., and Jacob L. Runk. (See Runk & Tharp.)	
109,968	Hatcher, John M., Bergen, N. J. Fire-place heater .....	June 14, 1870
104,337	Same..... Stove-grate .....	Dec. 6, 1870
	Thayer, Albert, and William A. Hastings, Thorndike, Mass. Check-rein attachment .....	June 14, 1870
100,213	Thayer, Charles, and David McPherson, Rome, N. Y. Packing for piston-rods.....	Feb. 22, 1870
106,742	Thayer, Cornelius, and Leman L. Thomas, Otego, N. Y. Harrow.....	Aug. 23, 1870
103,940	Thayer, Eber, Union City, Mich. Apparatus for splitting rock .....	June 7, 1870
103,104	Thayer, Hiram, Paxton, Mass. Mode of making boots .....	May 17, 1870
	Thayer, Hiram H., and William H. Hart, jr. (See Hart & Thayer.)	
103,390	Thayer, Moses A., Chicago, Ill. Hot-air furnace .....	May 24, 1870
	Thayer, Simeon O., and Benjamin F. Housel. (See Housel & Thayer.)	
106,093	Thayer, Theodore H., New Haven, Conn. Cock.....	Aug. 2, 1870
103,797	Thayer, William H., Thomaston, Conn. Shuttle for sewing-machines.....	May 31, 1870
99,032	Theberath, Charles M., Newark, N. J. Mode of covering harness-trimmings ..	Jan. 18, 1870
104,509	Theisen, Mathias, Waukon, Iowa. Bolt and rivet trimmer.....	June 21, 1870
107,736	Theurer, Fritz Robert, Switzerland. Stem-winding and setting attachment to watches .....	Sept. 27, 1870
105,740	Thickens, Richard W., assignor to David R. Sperry, Batavia, Ill. Farmers' boiler.....	July 26, 1870
106,890	Thielcke, Charles M., Chicago, Ill. Curtain-fixture .....	Aug. 30, 1870
103,525	Thielemann, John, and Philip Meyer, assignors to William Sellers, Newark, N. J. Piano-lock .....	May 24, 1870
109,779	Thiers, William F. J., New York, N. Y. Ventilator, alarm, and bilge-pump for vessels .....	Nov. 29, 1870
98,896	Thiery, C. L., Boston, Mass. Watch-case .....	Jan. 18, 1870
108,847	Same..... same .....	Nov. 1, 1870
3,889	Thilenius, George C., Cape Girardeau, Mo. Trade-mark .....	Mar. 8, 1870
105,518	Thing, R. W., assignor to self and David T. Pray, Boston, Mass. Gauge-pin for tympan-sheets .....	July 19, 1870
107,980	Thirkittle, George M., Belleville, Mich. Grain and seed drill .....	Oct. 4, 1870
100,468	Thoits, Frank, Yarmouth, Me. Friction-roll for yard-arms.....	Mar. 1, 1870
101,786	Thomas, George F., jr., Brooklyn, N. Y. Paper for checks, drafts, notes, &c.....	April 12, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Thomas, A. ( <i>See</i> Cayce, John M., assignor).....(Reissue.)	
102,729	Thomas, Abraham and George D., St. Thomas, Pa. Hay and lime elevator.....	May 3, 1870
109,686	Thomas, Alfred, Hoboken, N. J. Apparatus for marking cloth.....	Nov. 29, 1870
107,564	Thomas, Alfred, Worcester, Mass. Tool-rest.....	Sept. 20, 1870
109,687	Thomas, Alphonse, Hoboken, N. J. Apparatus for marking cloth.....	Nov. 29, 1870
	Thomas, Benjamin F., and Marshall Turley. ( <i>See</i> Turley & Thomas.)	
100,951	Thomas, Chauncey, Boston, Mass. Thill-coupling. (Antedated March 3, 1870).	Mar. 15, 1870
104,901	Same.....Axle-nut and axle.....	June 28, 1870
110,606	Same.....Carriage.....	Dec. 27, 1870
4,323	Thomas, Daniel W., assignor to Henry Brewster, John W. Button, and James Lawrence, New York, N. Y. Carriage-door handle.....(Design)	Aug. 30, 1870
109,969	Thomas, Edward, Shickshinny, Pa. Coal-screen.....	Dec. 6, 1870
105,998	Thomas, Edwin, Philadelphia, Pa. Machine for cushioning and ventilating leather.....	Aug. 2, 1870
105,385	Thomas, George, and William W. McLanahan, Milesburgh, Pa. Double-tuyere forge-fire.....	July 12, 1870
105,864	Thomas, George G., St. Louis, Mo. Hot-air furnace.....	July 26, 1870
	Thomas, Henry. ( <i>See</i> Kirk, Solomon W., assignor.)	
4,147	Thomas, Hermon, Philadelphia, Pa. Cider, wine, and other press....(Design)	June 7, 1870
103,391	Thomas, James, Parryville, Pa. Apparatus for opening and closing the tops of blast-furnaces.....	May 24, 1870
105,865	Thomas, Jesse B., Centreville, Ind. Corn-marker.....	July 26, 1870
107,124	Thomas, John, Hardwick, Vt. Device to regulate the flow of sap to evaporating-pans.....	Sept. 6, 1870
100,566	Thomas, John, assignor to self, William Bacon, Harrison Groves, and Hugh Chaytor, England. Furnace for smelting and for other purposes. (Patented in England July 16, 1868)	Mar. 8, 1870
108,535	Thomas, John F., Ilion, N. Y. Chuck.....	Oct. 18, 1870
105,141	Thomas, John F., and Daniel H. McLane, Ilion, N. Y. Hay-spreader.....	July 5, 1870
99,498	Thomas, John Henry, Springfield, Ohio. Seed-sower.....	Feb. 1, 1870
105,866	Same.....Grain-drill.....	July 26, 1870
105,386	Thomas, John H., and Phineas P. Mast, Springfield, Ohio. Seeding-machine.....	July 12, 1870
105,387	Same.....Securing drill and cultivator teeth.....	July 12, 1870
4,091	Thomas, John H., Phineas P. Mast, and Charles O. Gardiner, assignors to John H. Thomas and Phineas P. Mast, Springfield, Ohio. Grain-drill..(Reissue)	Aug. 2, 1870
109,558	Thomas, John R., Mifflin, Pa. Cotton cultivator and plow.....	Nov. 22, 1870
99,259	Thomas, Leman L., and Cornelius Thayer. ( <i>See</i> Thayer & Thomas.)	
107,308	Thomas, Nicholas, Chicago, Ill. Machine for threading bolts.....	Jan. 25, 1870
	Same.....Safety-valve.....	Sept. 13, 1870
	Thomas, Owen W., and Stanton D. Warner. ( <i>See</i> Warner & Thomas.)	
	Thomas, Samuel, Hokendauqua, Pa. Ore-washer.....(Extension)	Sept. 15, 1870
	Thomas, T. C. ( <i>See</i> Barker, Charles, assignor.)	
	Thomas, William, and James Fraser. ( <i>See</i> Fraser & Thomas.)	
103,210	Thomas, William H., assignor to Turner, Seymour & Judds, Brooklyn, N. Y. Sash-fastener.....	Oct. 11, 1870
104,228	Thomas, William K., assignor to self and W. E. Hill, Brooklyn, N. Y. Window-guard.....	June 14, 1870
100,567	Thomas, William L., Wadsworth, Ohio. Balanced water-elevator.....	Mar. 8, 1870
109,157	Thomasson, Tower, Calhoun, Mo. Corn huller, sheller, and feed-cutter.....	Nov. 8, 1870
102,066	Thompson, Alexander, Burlington, Vt. Drill.....	April 19, 1870
98,528	Thompson, Alexander W., for himself, and as administrator of Henry Thompson, deceased, Saginaw, Mich. Head-block for saw-mills.....	Jan. 4, 1870
103,941	Thompson, Ambrose B., Owego, N. Y. Corn-sheller.....	June 7, 1870
101,062	Thompson, A. B., assignor to self and Albert Cleveland, Owego, N. Y. Clamp for holding brooms, brushes, &c. (Antedated March 7, 1870).....	Mar. 22, 1870
103,942	Thompson, Andrew, Ottawa, Ill. Mold-board press.....	June 7, 1870
107,203	Thompson, Barnes, Horton, Iowa. Feed-attachment for thrashing-machines.....	Sept. 6, 1870
	Thompson, Charles E. ( <i>See</i> Bradley, Samuel C., assignor.)	
	Thompson, Charles G. ( <i>See</i> Brooks, Silas M., assignor.)	
102,332	Thompson, Charles H., Alliance, Ohio. Die for making thrashing-machine teeth.....	April 26, 1870
102,183	Thompson, David B., Brooklyn, N. Y. Type-distributing machine.....	April 19, 1870
103,392	Thompson, Edward, Madison, Wis. Gas-condenser. (Antedated May 14, 1870).	May 24, 1870
105,278	Thompson, Edward Davis, Lawrence, Kans. Car-coupling.....	July 12, 1870
107,309	Thompson, Edward O., and Charles B., Thomasville, Ga. Horse-power apparatus. Thompson, Elizabeth. ( <i>See</i> Kelly, Peter J., assignor.)	Sept. 13, 1870
	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Extension)	
	Same.....Manufacture of caustic alkali.....(Extension)	Oct. 13, 1870
	Same.....same.....(Extension)	Oct. 13, 1870
102,620	Thompson, George, assignor to self and John H. Cogill, Trenton, N. J. Combination-padlock.....	May 3, 1870
99,260	Thompson, George K., Greene, N. Y. Paint-brush.....	Jan. 25, 1870
103,687	Thompson, Henry, Rockland, Me. Tackle-hook.....	May 31, 1870
	Thompson, H., and C. B. Conant. ( <i>See</i> Conant & Thompson.)	
104,793	Thompson, Henry C., Mount Sterling, Ky. Bridle-bit.....	June 28, 1870
3,932	Thompson, Henry G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern.....(Design)	Mar. 22, 1870
3,933	Same.....same.....(Design)	Mar. 22, 1870
3,934	Same.....same.....(Design)	Mar. 22, 1870
3,935	Same.....same.....(Design)	Mar. 22, 1870
3,936	Same.....same.....(Design)	Mar. 22, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,937	Thompson, Henry G., assignor to Hartford Carpet Company, New York, N. Y. Carpet-pattern. (Design).....	Mar. 22, 1870
3,938	Same..... same..... (Design).....	Mar. 22, 1870
3,939	Same..... same..... (Design).....	Mar. 22, 1870
3,940	Same..... same..... (Design).....	Mar. 22, 1870
	Thompson, Henry G., and Reune Martin. (See Howe, Frederick Webster, assignor.)	
107,565	Thompson, Ira F., Providence, R. I. Rasp.....	Sept. 20, 1870
100,339	Thompson, James K., Chicago, Ill. Wooden pavement.....	Mar. 1, 1870
109,273	Thompson, John, Louisville, Ky. Rotary pulverizer.....	Nov. 15, 1870
101,943	Thompson, John A., Auburn, N. Y. Ladder. (Antedated April 1, 1870).....	April 12, 1870
110,089	Same..... Method of uniting wood. (Antedated Nov. 26, 1870).....	Dec. 13, 1870
101,544	Thompson, John A., assignor to American Water-Purifying Company, Auburn, N. Y. Process and apparatus for supplying pure water to buildings. (Antedated March 25, 1870).....	April 5, 1870
109,470	Thompson, Justin G., and Frederick M. Briggs; said Briggs assignor to said Thompson, Stockton, N. Y. Seed-sower.....	Nov. 22, 1870
	Thompson, L. P., and Peter Geiser. (See Geiser & Thompson.)	
99,729	Thompson, Nathan, Brooklyn, N. Y. Nut for screw-bolts.....	Feb. 8, 1870
100,214	Same..... Washer for screw-bolts.....	Feb. 22, 1870
104,794	Same..... Bottle-stopper.....	June 28, 1870
	Thompson, Richard, and Emil T. Hartle. (See Hartle & Thompson.)	
100,952	Thompson, Robert J. S., Washington, Pa. Ash-shovel.....	Mar. 15, 1870
	Thompson, R. M., et al. (See Humes, James H., assignor.)	
108,407	Thompson, Samuel, Baltimore, Md. Machine for washing and cleaning coffee.....	Oct. 18, 1870
104,795	Thompson, Samuel R., Portsmouth, N. H. Pottery-machine.....	June 28, 1870
	Thompson, Sewell D., et al. (See Squires & Clinton, assignors.)	
102,881	Thompson, Taylor P., assignor to self and Lewis R. Bradley, Charlestown, Mass. Filter.....	May 10, 1870
99,261	Thompson, Thomas, assignor to self and John T. Vinson, Washington, D. C. Clock.....	Jan. 25, 1870
	Thompson, Thomas, deceased, by John Thompson, executor, New York, N. Y. Machine for folding paper, &c..... (Extension).....	Feb. 10, 1870
	Thompson, William, et al. (See Stephenson, Thompson & Blake.)	
107,737	Thompson, William, assignor to self, Jeremiah S. Bollman, and Michael H. Kline, Cleveland, Ohio. Vapor-burner.....	Sept. 27, 1870
105,999	Thompson, William Carroll, Williamson County, Tenn. Smut-mill.....	Aug. 2, 1870
	Thompson, William H., Boston, Mass., and Eustis P. Morgan, Biddeford, Me. Safety-hatch for warehouses..... (Extension).....	June 22, 1870
101,944	Thompson, William Sinclair, Rochester, N. Y. Fruit-jar.....	April 12, 1870
	Thomson, A. T. (See Fyans, Thomas, assignor.)	
108,211	Thomson, Edgar L., and Abraham Hursh, assignors to Hattie B. Thomson and Abraham Hursh, Philadelphia, Pa. Cooking-stove.....	Oct. 11, 1870
	Thomson, Frank. (See Westfall, Ezra B., assignor.)	
105,867	Thomson, George W., Buffalo, N. Y. Lamp.....	July 26, 1870
102,621	Thomson, Horatio N., Auburn, N. Y. Washing-machine.....	May 3, 1870
	Thomson, James E. (See Dopp, H. William, assignor.)	
	Thomson, John, and David Moffat. (See Moffat & Thomson.)	
107,738	Thomson, John T., Southport, Me. Snapper-cleat.....	Sept. 27, 1870
109,688	Thomson, William, Scotland. Recording-instrument for electric telegraphs.....	Nov. 29, 1870
104,184	Thomson, William P., Watertown, N. Y. Adjustable cheese-hoop.....	Mar. 22, 1870
	Thomson, William Sparks. (See Chapin, Henry A., assignor.)	
99,033	Thorla, F. W., Hoskinsville, Ohio. Horse hay-fork.....	Jan. 18, 1870
98,897	Thorn, Leonard, New York, N. Y. Steam-digester for rendering lard, &c. (Antedated May 25, 1868).....	Jan. 18, 1870
107,310	Thorn, William J., Westbrook, Me. Book-holder.....	Sept. 13, 1870
109,274	Thorne, John R., Waldoborough, Me. Hook for dumping-tubs.....	Nov. 15, 1860
99,499	Thorne, T. T. and G. T., Whitaker's Station, N. C. Corn-planter.....	Feb. 1, 1870
	Thorne, William H., and John Richards. (See Richards & Thorne.)	
107,566	Thorniley, John, Fallston, Pa. Center-plate for stove-tops.....	Sept. 20, 1870
102,333	Thornton, James, and Charles F. Denunen, Wellsville, N. Y. Trace-buckle.....	April 26, 1870
100,469	Thornton, John T., Kewanee, Ill. Three-horse equalizer. (Antedated Feb. 26, 1870).....	Mar. 1, 1870
106,743	Thornton, Sterling C., Macomb, Texas. Combined gang-plow and cultivator.....	Aug. 23, 1870
101,787	Thornton, William M. K., Rolla, Mo. Dust-arrester for railroad-cars.....	April 12, 1870
99,371	Thorp, H. D., and J. G. Lehr, Harlan, Ind. Brick-machine.....	Feb. 1, 1870
103,526	Thorp, James H., New York, N. Y. Coal-oil stove.....	May 24, 1870
109,970	Same..... Burglar-alarm.....	Dec. 6, 1870
109,971	Same..... Alarm-attachment.....	Dec. 6, 1870
109,471	Thorp, Joseph W., assignor to self, David F. Brown, and Albert Webster, Hillsborough Bridge, N. H. Sad-iron heater.....	Nov. 22, 1870
107,204	Thresh, George, assignor to self and Jonathan Roberts, Oxford, Me. Carding-machine.....	Sept. 6, 1870
103,943	Thrift, David V., assignor of one-half interest to Levi Fisher, Monroe, Iowa. Stove-pipe ventilator.....	June 7, 1870
	Throp, John A., and Cyrus Roberts. (See Roberts & Throp.)	
100,215	Thrush, E. A., New Kingston, N. Y. Corn planter.....	Feb. 22, 1870
98,529	Thuer, F. Alexander, assignor to the Colt's Patent Fire-Arms Manufacturing Company, Hartford, Conn. Cartridge-loading apparatus. (Patented in England April 9, 1869).....	Jan. 4, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,388	Thuer, F. Alexander, assignor to the Colt's Patent Fire-Arms Manufacturing Company, East Hartford, Conn. Breech-loading fire-arm ..... (Three cases.)	July 12, 1870
105,519	Thumm, Charles F., and Samuel A. Hill. (See Hill & Thumm).....	July 19, 1870
106,235	Thurber, John A., <i>et al.</i> (See Delamarre, Charles, assignor.)	
	Tibbals, S. Lee, Dutch Flat, Cal. Device for curling hair .....	Aug. 9, 1870
	Tibbits, James B., assignor to self and Joseph Stebbins, Portland, Mich. Cultivator .....	Dec. 27, 1870
110,512	Tibbits, James P., New York, N. Y. Turn-up seat for churches, &c. ....	Mar. 15, 1870
3,912	Tiebout, John, New York, N. Y. Shuttle-bar .....	June 14, 1870
4,033	Tierney, Dennis H., Forestville, Conn. Fastening for neck-ties. .... (Reissue.)	
	Tiffany & Co. (See Moore, Edward C., assignor) ..... (Two cases.) (Design.)	
100,340	Tiffany, E. Palmer, Hartford, Conn. Pen .....	Mar. 1, 1870
102,334	Same..... Paper-folder .....	April 26, 1870
106,000	Tiffany, Henry B., Medina, Ohio. Faucet .....	Aug. 2, 1870
4,488	Tiffany, Nelson O., Buffalo, N. Y. School-desk .....	Nov. 22, 1870
4,489	Same..... School-seat hinge .....	Nov. 22, 1870
110,402	Same..... Seat-hinge for school desks and settees .....	Dec. 20, 1870
102,989	Tift, Philancy D., Eagleville, Ohio. Warp-stand for looms. (Antedated May 3, 1870)	May 10, 1870
	Tilden, E. F. (See Patch, John L., assignor.)	
	Tileston, William M. (See King, Josias R., assignor.)	
	Same..... (See Hart, Amos W., assignor.)	
	Tilford, J. M., <i>et al.</i> (See Bussell, Erastus T., assignor.)	
108,408	Tilghman, Benjamin C., Philadelphia, Pa. Cutting and engraving stone, metal, glass, &c. ....	Oct. 18, 1870
110,403	Tillinghast, George S., and John W. Burdwin, Morrisville, N. Y. Bark rosser and breaker .....	Dec. 20, 1870
104,510	Tillman, Samuel D., Jersey City, N. J. Steam-heater .....	June 21, 1870
104,511	Same..... Steam-generator .....	June 21, 1870
104,512	Same..... Propelling vessels .....	June 21, 1870
104,513	Same..... Metallic pavement .....	June 21, 1870
	Tillotson, Eliphalet N., and R. H. Dewey. (See Dewey & Tillotson) .. (Reissue.)	
	Tillotson, William K., and Daniel W. Denman. (See Denman & Tillotson.)	
104,663	Tilly, Robert, Brooklyn, N. Y. Faucet .....	June 21, 1870
	Tilton, Alfred E., <i>et al.</i> (See Marland, Obadiah, assignor.)	
110,310	Tilton, Mary P. R., Trenton, N. J. Pad for corsets .....	Dec. 20, 1870
101,545	Tilton, Smilie, Alton, N. H. Extension-table .....	April 5, 1870
102,622	Timby, Theodore R., Brooklyn, N. Y. Sash-fastener .....	May 3, 1870
102,730	Same..... Combined thread and needle case .....	May 3, 1870
4,499	Same..... Tarrytown, N. Y. Medal .....	Nov. 29, 1870
109,275	Timpe, Gustavus C., New Orleans, La. Elevator .....	Nov. 15, 1870
99,972	Tingley, Albert H., Providence, R. I. Automatic heat-regulator for hot-air furnaces .....	Feb. 15, 1870
	Tipton, Thomas C., and Samuel Rowland. (See Rowland & Tipton.)	
103,798	Tirrell, Jacob Porter, assignor to Henry A. Clark, Charlestown, Mass. Electro-magnetic engine .....	May 31, 1870
	Tisdale, Denison. (See Patton, William R., assignor.)	
102,623	Titcomb, George H., and John P. Culver, Jersey City, N. J. Drain and water pipe.	May 3, 1870
106,970	Titus, Charles W., Philadelphia, Pa. Desk .....	Aug. 30, 1870
98,530	Titus, T. Benton, Phelps, N. Y. Sleigh-shoe .....	Jan. 4, 1870
109,689	Toan, John S., Rochester, N. Y. Automatic stove-register .....	Nov. 29, 1870
105,608	Toay, James, Mineral Point, Wis. Harvester-rake .....	July 19, 1870
	Tobey, Edward S., <i>et al.</i> (See Baylor, C. F., assignor.)	
100,817	Tobey, Preston A., assignor of one-half interest to Stephen Tobey, Caton, N. Y. Harvester .....	Mar. 15, 1870
100,818	Same..... Horse-power .....	Mar. 15, 1870
	Tobin, Joseph F. (See Murphy, John, assignor.)	
	Tobin, William. (See Sergeant, Henry C., assignor.)	
	Todd, Charles A. (See Fake, Henry, assignor)..... (Two cases.)	
	Todd, George C., Lynn, Mass. Edge-key for making and polishing the edges of boot and shoe soles .....	Nov. 22, 1870
103,848	Todd, James L., Newburgh, N. Y. Governor .....	Nov. 1, 1870
100,216	Toense, Charles G., Jersey City, N. J. Screw-propeller .....	Feb. 22, 1870
107,638	Tofflemire, John J., and Joseph D. Linnell, Rockford, Ill. Gate .....	Sept. 20, 1870
	Toiray, Gustave, and Vve. Adrien Maurice. (See Maurice & Toiray.)	
106,236	Tolar, Robert E., and William D. Orr, Newnan, Ga. Automatic table fan or brush .....	Aug. 9, 1870
98,816	Tolles, Abner, assignor to self and Almon Durkee Tolles, Weathersfield, Vt. Apparatus for evaporating saccharine and other solutions .....	Jan. 11, 1870
104,644	Tomb, Benjamin F., Tiffin, Ohio. Corn-planter .....	June 21, 1870
4,195	Tomlinson, Nathaniel F., Mystic Bridge, Conn. Treenail .....	Dec. 6, 1870
	Tomlinson Spring and Axle Company. (See Keeler, Frank, assignor.)	
	Tompkins, Clark and Ira, <i>et al.</i> (See Philip & Tompkins.)	
101,945	Tompkins, C. W., Assyria, Mich. Device for tenoning spokes .....	April 12, 1870
	Toms, Crowell M., and John R. Compton. (See Compton & Toms.)	
109,690	Tonner, John, Canton, Ohio. Stretching-frame .....	Nov. 29, 1870
108,849	Tooker, William S., assignor to self and Elliot Thomas, Kingsborough, N. Y. Glove .....	Nov. 1, 1870
	Same..... same .....	Nov. 1, 1870
103,850	Toomey, Samuel, Wilmot, Ohio. Carriage-seat .....	Jan. 11, 1870
98,721	Toone, James, jr., and Bird R. Brown. (See Brown & Toone.)	
106,024	Topham, William H., New York, N. Y. Spittoon .....	Aug. 2, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,513	Topliff, Isaac N., Adrian, Mich. Carriage-bow.....	Dec. 27, 1870
99,500	Toppan, Charles, Wakefield, Mass. Manufacture of oils from petroleum.....	Feb. 1, 1870
103,799	Same.....Treating fabrics to render them water-proof.....	May 31, 1870
3,931	Torney, P. J., assignor of part interest to Charles W. Hughes and John L. Kidwell, Washington, D. C. Machine for sawing marble.....(Reissue)..	April 19, 1870
102,450	Torrey, William A., Mont Clair, N. J. Preventing mildew and decay in sails, awnings, tents, tarpaulins, and other articles and fabrics.....	April 26, 1870
105,142	Same.....New York, N. Y. Application of carbolic acid for preventing decay and mildew in sail-cloth, canvas, and other fibrous and textile materials.....	July 5, 1870
110,172	Same.....Mont Clair, N. J. India-rubber and combination hose.....	Dec. 13, 1870
	Torstrick, Henry. (See Boeklen, Reinhold, assignor.)	
	Totten, James S. (See Schoonover, John Q. A., assignor.)	
89,973	Touaillon, Jules, San Francisco, Cal. Building.....	Feb. 15, 1870
4,291	Tower, Levi L., Somerville, Mass. Inkstand.....(Design)..	Aug. 9, 1870
	Same.....(See Hinman, George C., assignor.)	
	Same.....(See Somers, Daniel M., assignor.)	
110,311	Towers, Isaac A., Quincy, Fla. Cotton-seed and corn planter.....	Dec. 20, 1870
99,262	Towers, William H., Boston, Mass. Water-proof shoe.....	Jan. 25, 1870
104,514	Same.....Composition-roll for clothes-wringers.....	June 21, 1870
101,651	Towle, Hamilton E., New York, N. Y. Hoisting and lowering apparatus.....	April 5, 1870
102,832	Same.....Leveling and grading instrument.....	May 10, 1870
108,409	Same.....Shuttle. (Antedated Oct. 12, 1870).....	Oct. 18, 1870
	Towle, Hamilton E., and George Ed. Harding. (See Philip, Frank, assignor.)	
	Town, William H., and Edgar R. Hall. (See Hall & Town.)	
104,665	Towne, Arthur, Auburn, Me. Composition-bronze paint.....	June 21, 1870
103,256	Towne, Henry R., Stamford, Conn. Key-hole guard-lock.....	May 17, 1870
	Towne, Hollis. (See Simonds, Calvin W., assignor.)	
	Towne, William J. (See Bryant, Mertoun C., assignor.)	
101,185	Townsend, Dennis, Felchville, Vt. Folding-card globe.....	Mar. 22, 1870
	Townsend, Elmer. (See Stetson, Bradford, assignor).....(Reissue.)	
	Same.....same.	
100,819	Townsend, Henry, Philadelphia, Pa. Check-piece and shroud-yoke for ships' rigging.....	Mar. 15, 1870
99,974	Townsend, Henry, jr., Philadelphia, Pa. Trestle-tree for vessels.....	Feb. 15, 1870
4,388	Townsend, Matthew, Canton, Mass. Dress-goods.....(Design)..	Oct. 4, 1870
	Townsend, Walton. (See Hyde, Walter, assignor.)	
3,970	Townsend, Wisner H., New York, N. Y. Oilcloth-pattern.....(Design)..	April 12, 1870
3,998	Same.....same.....(Design)..	April 26, 1870
	Towsley, Lovias D., and James F. Spence. (See Spence & Towsley)....(Two cases.)	
110,090	Toye, Benjamin B., Toronto, Canada. Telegraphic relay.....	Dec. 13, 1870
	Tozer, Seth A., and Oscar N. Crane. (See Morehouse, Clark, assignor.)	
106,237	Trafton, John W., Springfield, Mass. Cock.....	Aug. 9, 1870
	Same.....(See Stuart, William George, assignor.)	
107,639	Tranter, James, Joseph Kinsey, and John M. Carr, Cincinnati, Ohio. Rotary power-plow.....	Sept. 20, 1870
108,652	Trapp, Thomas J., Williamsport, Pa. Pump-siphon.....	Oct. 25, 1870
107,981	Trask, Charles H., Lynn, Mass. Machine for lasting shoes.....	Oct. 4, 1870
107,125	Trant, Justus A., assignor to self and Jeremy W. Bliss, New Britain, Conn. Device for cutting wire or cord from bottle-stoppers.....	Sept. 6, 1870
103,393	Trautman, William F., Llewellyn, Pa. Paper-hangers' apparatus.....	May 24, 1870
103,212	Traver, Alvah, Troy, N. Y. Heating-stove.....	Oct. 11, 1870
108,410	Same.....Cooking-stove.....	Oct. 13, 1870
110,312	Same.....Heating-stove.....	Dec. 20, 1870
107,126	Travis, Dudley W., Enfield, N. Y., and Charles M. Clinton, Ithaca, N. Y. Binding-attachment for harvesters.....	Sept. 6, 1870
101,186	Travis, Joseph H., Charlestown, Mass. Folding-chair.....	Mar. 22, 1870
108,213	Trayuham, William L., Warrenton, Ga. Seed-planter and guano-distributor.....	Oct. 11, 1870
108,214	Treadway, James W., assignor to Oliver A. Whittemore, Crown Point Centre, N. Y. Gang-plow.....	Oct. 11, 1870
110,404	Treadwell, Francis C., jr., New York, N. Y., and Ebenezer G. Lamson, Windsor, Vt.; said Treadwell assignor to said Lamson. Stone-channeling machine.....	Dec. 20, 1870
100,953	Treat, Joseph, New York, N. Y. Manufacture of resin-oil.....	Mar. 15, 1870
104,796	Same.....Manufacture of soap.....	June 28, 1870
102,882	Treat, Sidney C., assignor to self and Charles P. Treat, Tabor, Iowa. Liquid-meter.....	May 10, 1870
	Tredeger Company. (See Eynon, David, assignor).....(Two cases.)	
110,607	Tredenick, William, Providence, R. I. Clothes-drier.....	Dec. 27, 1870
99,275	Tredway, Louis D., St. Louis, Mo. Bench-plane.....	Jan. 25, 1870
107,425	Tregollas, Henry, Calumet, Mich. Wrench.....	Sept. 13, 1870
102,884	Treanunay, Alexandre, France. Wooden-block pavement.....	May 10, 1870
	Trenor, Michael, et al. (See Lutz, Royce, Trenor & Chadwick.)	
99,730	Trent, Joseph, Millerton, N. Y. Draught-bar for horse-cars.....	Feb. 8, 1870
103,944	Same.....Volute-spring. (Antedated June 1, 1870).....	June 7, 1870
	Trescott, Luther. (See Helder, John W., assignor.)	
	Trested, Richard H., and John L. Kendall. (See Kendall & Trested.)	
106,001	Trevithick, Frederick H., jr., New York, N. Y. Railway-car wheel.....	Aug. 2, 1870
	Tribo, Thomas, and Thomas Weeden. (See Weeden & Tribe.)	
101,946	Trimmer, B. T., Rochester, N. Y. Machine for scouring grain, &c.....	April 12, 1870
104,916	Tripler, Archibald B., New Orleans, La. Preserving wood.....	June 28, 1870
164,917	Same.....Preserving wood for railroad-ties and for other purposes.....	June 28, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,637	Tripp, Albert E., Springfield, Ohio. Curtain-fixtures .....	Aug. 23, 1870
	Tripp, Amos L., <i>et al.</i> (See Ryerson & Stanciliff, assignors.)	
106,430	Tripp, Augustus F., Buffalo, N. Y. Dredge-box .....	Aug. 16, 1870
99,731	Tripp, Charles M., Pittsburgh, Pa. Clip for harness .....	Feb. 8, 1870
101,783	Tripp, Eliphalet A., Newark, N. J. Scroll-sawing machine .....	April 12, 1870
104,666	Tripp, Hiram B., Boston, Mass. Bolt for safe-doors .....	June 21, 1870
	Tripp, Robert O. (See Walker, William, assignor.)	
103,215	Tripp, Seth D., Lynn, Mass. Steam-trap. (Antedated Sept. 26, 1870) .....	Oct. 11, 1870
103,216	Same.....Leather-buffing machine. (Antedated Sept. 26, 1870) .....	Oct. 11, 1870
109,077	Same.....Machine for laying channels in boots and shoes .....	Nov. 8, 1870
	Tripp, Stephen G., <i>et al.</i> (See Ryerson, Stanciliff & McIntosh, assignors.)	
106,517	Tripp, Thomas, Chicago, Ill. Fire-extinguisher .....	Aug. 16, 1870
110,514	Tripp, William, Mechanicsville, N. Y. Potato-digger .....	Dec. 27, 1870
102,624	Trissler, William H., Cleveland, Ohio. Faucet .....	May 3, 1870
4,054	Same.....same..... (Reissue) .....	June 28, 1870
	Troemner, Henry. (See Haslam, William, assignor.) (Design.)	
100,217	Tromly, Michael, assignor to self and W. L. Hasbrouck, Cincinnati, Ohio. Escapement for time-pieces .....	Feb. 22, 1870
103,394	Trone, Asa, Nebraska, Ohio. Horse-power sawing-machine .....	May 24, 1870
103,395	Trott, Charles H., Boston, Mass. Attachment for buckles .....	May 24, 1870
109,559	Trotter, Jonathan G., Newark, N. J. Furnace for desulphurizing ores .....	Nov. 22, 1870
102,625	Troup, Abraham, assignor to self and Herman Kirk, Louisburgh, Pa. Machine for boring hubs .....	May 3, 1870
	Trout, B. S., <i>et al.</i> (See Hand, Benjamin R., assignor.)	
107,932	Trowbridge, Edmund, and James M. Jones, Detroit, Mich. Drier .....	Oct. 4, 1870
	Trowbridge, H. and G. O. (See Pitcher, Hiram, assignor.)	
104,515	Trowbridge, James T., Akron, Ohio. Seeder and cultivator combined .....	June 21, 1870
99,372	Trowbridge, John H., New Haven, Conn. Machine for packing tobacco .....	Feb. 1, 1870
	Troxler, Anderson, and William C. Bomar. (See Bomar & Troxler.)	
99,263	Trubee, S. Curtis, Brooklyn, N. Y. Window-button .....	Jan. 25, 1870
107,127	Trudell, Samuel O., Detroit, Mich. Automatic gas-regulator .....	Sept. 6, 1870
105,741	True, Cyrus B., Boston, Mass. Sewing-machine .....	July 26, 1870
100,691	Truog, L. Ignatius, St. Vincent's, Pa. Sun-dial .....	Mar. 8, 1870
4,024	Truesdale, Charles, assignor to self and William Resor & Co., Cincinnati, Ohio. Lining for fire-place .....	June 7, 1870
	(Reissue) .....	
101,187	Truesdell, Lucius E., Chicago, Ill. Railroad-car axle .....	Mar. 22, 1870
105,868	Same.....Clamp for bridges .....	July 26, 1870
101,964	Same.....Warren, Mass. Burning petroleum and other hydrocarbon oils .....	April 12, 1870
104,902	Same.....Iron bridge .....	June 23, 1870
110,091	Trumbull, Charles Henry, Marion, N. Y. Tree-protector .....	Dec. 13, 1870
109,560	Trump, Fuller, Springfield, Ohio. Link for operating the annular series of gates for water-wheels .....	Nov. 22, 1870
99,373	Trump, Isaac, assignor to self and Daniel O. McCarthy, San Francisco, Cal. Driven-well .....	Feb. 1, 1870
101,947	Trump, Joseph, Springfield, Ohio. Cotton-seed planter .....	April 12, 1870
106,744	Truenick, William B., assignor to Nathaniel B. Connel, Louisville, Ky. Head-block saw-mills .....	Aug. 23, 1870
	Trunz, Peter, and Horatio Willard. (See Willard & Trunz.)	
106,891	Truxel, John S., Greensburgh, Pa. Harvester .....	Aug. 30, 1870
109,078	Truxell, Andrew J., Lynchburgh, Va. Boring-machine .....	Nov. 8, 1870
109,079	Same.....Combined center and lathe dog .....	Nov. 8, 1870
102,626	Tschudin, John George, Baltimore, Md. Blower for blacksmiths' forge .....	May 3, 1870
	Tubbs, George W., and John W. Brockleband. (See Brockleband & Tubbs.)	
99,501	Tuck, J. H. L., Ottawa, Ill. Corn-harvester .....	Feb. 1, 1870
100,820	Tucker, Benjamin W., Brooklyn, N. Y. Paddle-wheel .....	Mar. 15, 1870
105,869	Tucker, Charles E., assignor to self and T. L. Appleton, Boston, Mass. Carpenters' plane .....	July 26, 1870
110,092	Tucker, Cyrus and William H., Indianapolis, Ind. Alarm-till. (Antedated Dec. 9, 1870) .....	Dec. 13, 1870
103,527	Tucker, Hiram, Newton, Mass. Surfacing cast iron .....	May 24, 1870
103,688	Tucker, James F., Monticello, Fla. Corn and cotton planter, fertilizer-distributor, cotton-chopper, and cultivator combined .....	May 31, 1870
	Tucker Manufacturing Company. (See Hull, Liverus, assignor.)	
109,158	Tucker, Nathaniel, Levi Williams, and Henry H. Coppock, Pleasant Hill, Ohio. Rock-drilling machine .....	Nov. 8, 1870
4,084	Tucker, Stephen D., assignor to R. Hoe & Co., New York, N. Y. Printing-press. (Reissue) .....	Aug. 2, 1870
	Tucker, Stephen D., and Richard M. Hoe. (See Hoe & Tucker.)	
101,183	Tucker, Sylvester G., and John H. Rose, Richmond, Va. Automatic fan .....	Mar. 22, 1870
104,797	Tucker, William, Fiskdale, Mass. Boring-machine .....	June 23, 1870
106,431	Tucker, William, assignor to self and Prince A. Snell, Fiskdale, Mass. Saw-filing machine .....	Aug. 16, 1870
100,037	Tuckett, George E., Hamilton, Canada. Case for curing and transporting tobacco .....	Feb. 22, 1870
102,885	Tuell, Melzer, Penn Yan, N. Y. Implement for measuring boards .....	May 10, 1870
101,789	Tuell, Melzer, assignor to self, Lewis D. Young, and Benjamin F. Fenner, Penn Yan, N. Y. Fruit and extension ladder. (Antedated April 9, 1870) .....	April 12, 1870
103,411	Tuell, Melzer, assignor to self and Sylvester Bowers, Penn Yan, N. Y. Straw-cutter .....	Oct. 18, 1870
3,816	Tufts, James W., Medford, Mass. Casing for soda-water apparatus. (Design) ..	Jan. 11, 1870
4,020	Tufts, Otis, Boston, Mass. Overhead work for passenger elevator-cars. (Design) ..	May 10, 1870
	Same.....(See Wyman, Martin L., assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,610	Tully, John W., Delano, Pa. Composition or filling for coach-painter .....	Feb. 8, 1870
105,520	Tully, Patrick, San Francisco, Cal. Centrifugal sugar draining and molding machine .....	Jan. 19, 1870
102,335	Tully, Thomas, St. Joseph, Mo. Vapor-burner .....	April 26, 1870
109,691	Tumler, Antony, New York, N. Y. Sirup-can .....	Nov. 29, 1870
105,742	Tunks, Richard M., and Peter Arendt. (See Nicholson, Frederic, assignor.) .....	July 26, 1870
105,014	Turly, Marshall, and Benjamin F. Thomas, Council Bluffs, Iowa. Printers' ink. .....	July 5, 1870
110,173	Turly, Marshall, Council Bluffs, Iowa. Bridge. (Antedated Dec. 3, 1870) .....	Dec. 13, 1870
107,567	Turnbull, Andrew, New Britain, Conn. Ratchet-feed mechanism .....	Sept. 20, 1870
110,603	Turnbull, A. E., jr., assignor to Joseph H. Steele, Clifton, Ohio. Pepper and spice box .....	Dec. 27, 1870
100,341	Turnbull, James and William, Vancouver, Wash. Ter. Curtain-fixture .....	Mar. 1, 1870
105,389	Trumbull, Nisbet, <i>et al.</i> (See McDaniel, George W., assignor.) .....	July 12, 1870
104,903	Turner, Elisha, Wolcottville, Conn. Tassel-hook .....	June 28, 1870
	Turner, Elisha, executor. (See Smith, Rodney L., assignor.) .....	
	Turner, George F., and John H. Slocum. (See Slocum & Turner.) .....	
	Turner, George W., <i>et al.</i> (See Wicks, Loren J., assignor.) .....	
3,923	Turner, Grant B., and James A. Vaughn, assignors to G. B. Turner, Cuyahoga Falls, Ohio. Grain-separator. (Reissue) .....	April 19, 1870
	Turner, Isaac. (See Austin, James F., assignor.) .....	
104,082	Turner, John C., Newark, N. J. Bedstead-fastening .....	June 7, 1870
109,972	Turner, Josiah and Stephen Woodward, Sunapee, N. H. Mode of drawing water from wells .....	Dec. 6, 1870
108,653	Turner, Lawrence, New Orleans, La. Piston-packing .....	Oct. 25, 1870
99,732	Turner, Mahlon P., Des Moines, Iowa. Street-railway car .....	Feb. 8, 1870
105,390	Turner, Reuben D., New York, N. Y. Manufacture of vinegar and acidifying liquids .....	July 12, 1870
	Turner, Reuben D., and Wellwood Murray. (See Loew, Oscar, assignor.) .....	
105,618	Turner, Robert, assignor to Turner & Lutes, Rochester, N. Y. Flour-bolt attachment .....	July 19, 1870
	Turner, Seymour & Judds. (See Thomas, William H., assignor.) .....	
	Same. (See Brothwell, John G., assignor.) .....	
108,536	Turnipseed, Edward B., Columbia, S. C. Bee-hives .....	Oct. 18, 1870
	Turrell, Horace. (See Myers, C. K., assignor.) .....	
99,034	Tush, Elwood, Manchester, Iowa. Harvester .....	Jan. 18, 1870
99,035	Tutte, Edwin, England. Tie for hollow walls .....	Jan. 18, 1870
	Tuttle, Aaron K., and Chamberlayne Phelps. (See Phelps & Tuttle.) .....	
98,645	Tuttle, Abel, Mannsville, N. Y. Plant-protector .....	Jan. 4, 1870
99,374	Tuttlö, B. W., Galena, Ill. Water-wheel .....	Feb. 1, 1870
108,946	Tuttle, Charles N., Auburn, N. Y. Cap for plane-irons .....	Nov. 1, 1870
101,682	Tuttle, David K., and Orazio Lugo, Baltimore, Md. Ice-machine .....	April 5, 1870
	Tuttle, Edward A., Brooklyn, N. Y. Register and ventilator. (Extension) .....	June 8, 1870
109,080	Same. Williamsburgh, N. Y. Iron lining for fire-pots .....	Nov. 8, 1870
100,821	Tuttle, Horace P., Brooklyn, N. Y. Hand-indicator for showing the course of vessels .....	Mar. 15, 1870
99,502	Tuttle, Ichabod B., Conewango, N. Y. Milk tempering and cooling apparatus .....	Feb. 1, 1870
101,546	Tuttle, John W., Newton Corner, Mass. Paper-box .....	April 5, 1870
103,203	Same. Newton, Mass. Crutch .....	Oct. 11, 1870
4,096	Tuttle, Joseph H., assignor to Elisha P. Wheeler, Edward M. Madden, and William Clemson, Middletown, N. Y. Saw .....	Aug. 9, 1870
	Same. (Reissue) .....	
100,692	Tuttle, Joseph P., Warren, Ohio. Damper .....	Mar. 8, 1870
102,067	Tuttle, Joseph Wood, and Julius Peterson, Rochester, N. Y. Detaching-hook .....	April 19, 1870
	Tuttle, Perry M. (See Stephens, Perry M., assignor.) .....	
	Tuttle, Sidney S. (See Pierpont, Joshua, assignor.) .....	
101,547	Tuttle, William, Fayette, Miss. Harrow .....	April 5, 1870
4,009	Tuttle, William G., Chelsea, Mich. Cross-cut saw. (Design) .....	May 3, 1870
98,898	Tuxworth, William, Sheridan, Mich. Machinery for sawing laths .....	Jan. 18, 1870
104,229	Twamley, James, New York, N. Y. Tag for shoe-strings .....	June 14, 1870
103,067	Same. Metallic binding for textile fabrics .....	Oct. 4, 1870
	Same. (See Struck, Charles E., assignor.) .....	
99,975	Tweddle, Herbert W. C., Pittsburgh, Pa. Manufacture of paraffine and paraffine oils .....	Feb. 15, 1870
4,533	Tweed, Henry A., New York, N. Y. Medicine-dropper. (Design) .....	Dec. 20, 1870
107,128	Twigg, George, England. Shearing and clipping apparatus .....	Sept. 6, 1870
106,432	Twigg, Almon, Waltham, Mass. Reversible center-pinion for watches .....	Aug. 16, 1870
	Twining, Alexander C. Manufacturing ice. (Extension) .....	July 14, 1870
99,976	Twitchell, Henry, Cincinnati, Ohio. Apparatus for ascertaining the amount of acids in liquids .....	Feb. 15, 1870
	Tyer, Henry G., Andover, Mass., and John Helm, New Brunswick, N. J. Making gum-elastic cloth. (Extension) .....	Jan. 3, 1870
4,052	Tyler, Alanson P., Boston, Mass. Toy steam-engine .....	May 17, 1870
	Tyler, Alexander, and Paris Gibson. (See Gibson & Tyler.) .....	
	Tyler, Charles G. (See Neumann, Eugen, assignor.) .....	
101,189	Tyler, Cyrus, Dryden, N. Y. Horse hay-rake .....	Mar. 22, 1870
105,143	Tyler, David M., Union Township, Ind. Fence .....	July 5, 1870
106,095	Tyler, Joel, New Carlisle, Ohio. Stock-barn .....	Aug. 2, 1870
	Tyler, John, West Lebanon, N. H. Water-wheel. (Extension) .....	Nov. 25, 1870
104,230	Tyler, Peter, Ypsilanti, Mich. Saw-buck .....	June 14, 1870
	Tyrrrell, James E. (See McClaskey, Joseph O., assignor.) .....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
98,817	Tyson, William W., assignor to Philipp Weisenberger, Allegheny City, Pa. Vapor-burner	Jan. 11, 1870
3,895	Udell, Calvin G., Chicago, Ill. Step-ladder..... (Reissue.)	Mar. 22, 1870
4,068	Ueberroth, Edwin R. J., and John D. Brunner. (See Brunner & Ueberroth.)	
103,528	Uhlinger, William P., Philadelphia, Pa. School-desk..... (Design.)	May 24, 1870
104,378	Same..... Washing and drying machine.....	May 24, 1870
101,063	Uhlinger, William P., and Justus Doering, Philadelphia, Pa. Sewing-machine cover.....	June 14, 1870
101,064	Uhry, H., assignor to the American Stair-Rod Company, New York, N. Y. Stair-rod.....	Mar. 22, 1870
100,568	Same..... same.....	Mar. 22, 1870
100,218	Ulmaun, Gustave, assignor to Charles Rhodes Goodwin, France. Seal-lock.....	Mar. 8, 1870
	Ulrich, Friedrich, Brooklyn, E. D., N. Y. Shears.....	Feb. 22, 1870
	Underhill Edge-Tool Company. (See Drew, Carlos B., assignor)..... (Design.)	
	Underhill, James E. (See St. John, Cornelius, assignor.)	
	Underwood, Harrison, and John F. Smith. (See Smith & Underwood.)	
100,822	Unghish, John F., Webster, N. Y. Vegetable-scott.....	Mar. 15, 1870
102,886	Same..... Apparatus for assorting potatoes, &c.....	May 10, 1870
	Union Eyelet Company. (See Smith, Stephen N., assignor)..... (Two cases.)	
	Union Machine Company. (See Shelden, Francis, assignor.)	
	Union Nut Company. (See Tetro, Wally, assignor.)	
	Union Omnibus and Wagon Manufacturing Company. (See Wolff, Jacob, assignor.)	
	Union Stone Company. (See Elliott, Josiah S., assignor)..... (Two cases.)	
	Same..... (See Wood, John F., assignor.)	
	United States and Foreign Salamander Felting-Company. (See Riley & Bissell, assignors)..... (Reissue.)	
	Same..... (See Riley, John, assignor.)	
	United States Brick-Machine Company. (See Gard, Benjamin M. and Emery R., assignors)..... (Reissue.)	
	United States Gas Company. (See O'Meara, Timothy, assignor.)	
	United States Steam-Gauge Company. (See Clark, Elijah, assignor.)	
	United States Wind Engine and Pump Company. (See Halladay, Daniel, assignor)..... (Reissue.)	
	Updegraff, William. (See Keller, John F., assignor)..... (Two cases.)	
102,887	Updike, Orrin, Grass Lake, Mich. Metallic churn-dasher.....	May 10, 1870
110,515	Upham, Albert N. (See Cole, Noah L., assignor.)	
	Upham, Victor De M., Brooklyn, N. Y. Machine for heading rivet and screw blanks. (Antedated Dec. 10, 1870)	Dec. 27, 1870
104,667	Upson, Benjamin F., and Charles C. Bradley. (See Bradley & Upson.)	
107,983	Upson, James W., Tallmadge, Ohio. Animal-tether.....	June 21, 1870
102,731	Ure, James Millar, Great Britain. Locomotive.....	Oct. 4, 1870
101,548	Urie, James, Evansville, Ind. Machine for making plows.....	May 3, 1870
3,989	Urmston, John J., Rahway, N. J. Wood-turning lathe.....	April 5, 1870
	Usher, Charles, assignor to S. B. Hewitt, jr., and L. P. Jones, Iowa Falls, Iowa. Coating iron and steel..... (Reissue.)	May 24, 1870
108,654	Usher, John H., assignor to the Buffalo and Niagara Scale Works Company, Buffalo, N. Y. Scale-beam.....	Oct. 25, 1870
	Usher, Stephen L., et al. (See Armington, William W., assignor.)	
	Utassy, F. G., & Co. (See Kraftt, Albert, assignor.)	
102,336	Utley, Gabriel, Chapel Hill, N. C. Wrench.....	April 26, 1870
106,638	Utley, Grey, Charlotte, N. C. Hay and cotton press.....	Aug. 23, 1870
106,238	Utley, Grey, assignor to self and Glenn & Wright, Charlotte, N. C. Stump-puller.....	Aug. 9, 1870
107,068	Utley, William, Troy, N. Y. Tile for roofing, &c.....	Oct. 4, 1870
101,549	Utter, Samuel S., New York, N. Y. Shelf for ovens of cooking-stove.....	April 5, 1870
4,053	Same..... Brooklyn, N. Y. Stove..... (Design.)	May 17, 1870
107,568	Vail, Samuel S., Keokuk, Iowa. Wood-bucket. (Antedated Sept. 12, 1870)	Sept. 20, 1870
	Vaill, Edward W. (See Merriam, Joseph D., assignor)..... (Reissue.)	
	Same..... (See Boyd, Asahel C., assignor.)	
98,646	Vaillant, C. R., Whistler, Ala. Valve-cock.....	Jan. 4, 1870
98,647	Vairin, A. L. P., Ripley, Miss. Wheeled harrow.....	Jan. 4, 1870
3,796	Vale, Joseph, Beloit, Wis. Oven..... (Reissue.)	Jan. 11, 1870
4,055	Same..... same..... (Division A, reissue.)	June 28, 1870
4,056	Same..... same..... (Division B, reissue.)	June 28, 1870
107,984	Same..... Rotary bake-oven.....	Oct. 4, 1870
104,083	Vale, Joseph and Charles L., Chicago, Ill. Bakers' oven.....	June 7, 1870
	Valentine & Butler Safe and Lock Company. (See Butler, William H., assignor.)	
	Valentine & Sparks. (See Hedges, John R., assignor.)	
100,693	Valentine, Jacob, Bound Brook, N. J., Francis Farris, jr., Elizabethtown, N. J., and Chauncey Barnes, New York, N. Y., assignors to Daniel R. Pratt. Rail-way-rail splice.....	Mar. 8, 1870
103,304	Valentine, William P., assignor to self and John Robert Drake, Buffalo, N. Y. Mop-head.....	Oct. 11, 1870
109,852	Valkmar, Charles, New York, N. Y. Bed-bottom.....	Dec. 6, 1870
	Valladares, Hilario, and Carlos Ortig. (See Ortig & Valladares.)	
103,257	Valley, John N., Detroit, Mich. Clothes-drier.....	May 17, 1870
106,745	Van, John, Cincinnati, Ohio. Culinary apparatus.....	Aug. 23, 1870
106,746	Same..... Hot-air furnace.....	Aug. 23, 1870
100,088	Van Aken, Myers I., Sturgis, Mich. Horse-poke.....	Feb. 22, 1870
	Van Allen, Mary A., et al. (See Browne, A. W., assignor)..... (Reissue.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,068	Van Anden, William, Poughkeepsie, N. Y. Machine for making wrought-iron chairs for railroads.	April 19, 1870
109,973	Van Antwerp, John, Cleveland, Minn. Clevis for sleds.	Dec. 6, 1870
98,818	Van Arnum, James D., and William Ives, Troy, N. Y. Non-conducting composition for covering steam-boilers.	Jan. 11, 1870
99,375	Van Benthuyssen, Henry B., Lock Haven, Pa. Base-burning stove.	Feb. 1, 1870
98,531	Van Bibber, Merritt, Tipton, Ind. Harrow.	Jan. 4, 1870
3,846	Van Brunt, W. A., Horicon, Wis. Seeding-machine. (Reissue).	Feb. 15, 1870
101,683	Van Buren, Jafew S., Green Island, N. Y. Hot-air furnace.	April 5, 1870
100,954	Van Camp, A., Washington, D. C., and M. M. Hodgman, St. Louis, Mo. Composition for concrete pavements, walks, &c.	Mar. 15, 1870
103,105	Same..... Pavement.	May 17, 1870
99,611	Vancleave, James C., Hamburgh, Ark. Mechanical movement.	Feb. 8, 1870
99,977	Van Dake, Frank R., Jackson, Miss. Folding-crate.	Feb. 15, 1870
104,799	Vandegrift, Andrew J., Covington, Ky. Machine for hulling cotton-seed, &c.	June 23, 1870
107,311	Same..... Flour and grist mill.	Sept. 13, 1870
103,106	Vandegrift, Andrew J., and George W. M., Cincinnati, Ohio. Grinding-mill.	May 17, 1870
4,119	Vandegrift, James, Princeton, Ill. Plow. (Reissue).	Sept. 13, 1870
99,264	Vandemark, Charles, Phelps, N. Y. Cooking-stove.	Jan. 23, 1870
109,780	Same..... Portable furnace.	Nov. 29, 1870
108,537	Vandenburgh, Nicholas, Schuylersville, N. Y. Potato-digger.	Oct. 13, 1870
109,974	Same..... same.	Dec. 6, 1870
	Vandergift, Theodore F., and William M. Perkins. (See Perkins & Vandergift.)	
	Vanderhover, Bergen, <i>et al.</i> (See Freeman, Idell & Vanderhoven.)	
100,342	Vanderpool, James, Hackensack, N. J. Device for oiling carriage-wheels.	Mar. 1, 1870
103,529	Vanderslice, George Z., and Bela L. Churchill, Phillipsburgh, Pa. Saw-filing machine.	May 24, 1870
103,655	Vanderveer, Benjamin D. and David A., and Tunis Denise, Freehold, N. J. Machine for assorting potatoes.	Oct. 25, 1870
109,276	Vanderveer, Elias W. C., Linden, N. J. Earth-closet.	Nov. 15, 1870
	Vandervoort, Charles M., and William F. Fluhrer. (See Manson, George W., assignor.) (Design.)	
104,379	Vandervoort, Charles M., <i>et al.</i> (See Manson, George W., assignor.)	
	Vander Weyde, Nicholas J., New York, N. Y. Game. (Antedated June 3, 1870).	June 14, 1870
104,798	Vander Weyde, Peter H., New York, N. Y. Instrument for testing oils. (Antedated June 6, 1870).	June 23, 1870
105,609	Same..... Apparatus for cooling and refrigerating.	July 19, 1870
108,851	Same..... Manufacture of ice.	Nov. 1, 1870
103,258	Van Derzee, Cornelius, and Benjamin Reamer, Albany, N. Y. Potato-digger.	May 17, 1870
106,518	Van Deursen, William P., Cincinnati, Ohio. Compound for extinguishing fires.	Aug. 16, 1870
109,975	Same..... Fire-extinguisher.	Dec. 6, 1870
103,800	Van Deursen, William P., assignor to self and William C. Davis, Cincinnati, Ohio. Composition for extinguishing fires.	May 31, 1870
106,002	Van Deursen, William P., and William C. Davis, Cincinnati, Ohio. Automatic fire-extinguisher for railroad-cars, &c.	Aug. 2, 1870
	Same..... (See Stewart & Bradley, assignors.) (Reissue.)	
105,144	Van Deusen, Charles C., Stout Brook, N. Y. Bee-feeder.	July 5, 1870
109,081	Van Deventer, Presley D., Wright City, Mo. Cook-room refrigerator and condenser.	Nov. 8, 1870
101,190	Van Dusen, John D., assignor to self and Jacob Brinkerhoff, Auburn, N. Y. Washing-machine.	Mar. 22, 1870
105,279	Van Dyne, Jacob Brill, Covington, Ky. Fire-extinguisher.	July 12, 1870
109,976	Same..... same.	Dec. 6, 1870
102,069	Van Epps, James R., Albany, N. Y. Dovetailing-machine.	April 19, 1870
106,519	Van Eps, Henry R., Peoria, Ill. Combined latch and lock for gates.	Aug. 16, 1870
102,732	Van Everen, Philip, Brooklyn, N. Y. Copy-book.	May 3, 1870
103,733	Same..... Book-cover protector.	May 3, 1870
4,542	Van Gaasbeek, Beekman, Mount Vernon, N. Y. Poultry-fountain. (Design).	Dec. 27, 1870
106,003	Van Gorder, James L., Sidney, Ohio. Sulky-plow.	Aug. 2, 1870
99,978	Van Haagen, Anthony, and William Adamson, Philadelphia, Pa. Fertilizer from glue residuum.	Feb. 15, 1870
99,979	Same..... Soap product from glue residuum.	Feb. 15, 1870
4,534	Van Haagen, Anthony, assignor to McKeone, Van Haagen & Co., Philadelphia, Pa. Block of soap. (Design).	Dec. 20, 1870
108,305	Van Haagen, Claus, assignor to self and Anthony Van Haagen, Philadelphia, Pa. Planing-mechanism.	Oct. 11, 1870
103,306	Same..... Turning and boring mechanism.	Oct. 11, 1870
110,405	Same..... Portable drilling-tool.	Dec. 20, 1870
110,406	Same..... Gear-cutting machine.	Dec. 20, 1870
110,407	Same..... Grooving-tool.	Dec. 20, 1870
110,609	Same..... Machine for cutting and sharpening metals.	Dec. 27, 1870
109,561	Van Houten, James H., Newark, N. J. Air-carbureting wheel.	Nov. 22, 1870
109,562	Same..... Apparatus for carbureting air.	Nov. 22, 1870
109,563	Same..... Gas-machine.	Nov. 22, 1870
105,433	Van Keuren, Henry, Jersey City, N. J. Pump.	Aug. 16, 1870
104,231	Van Kleck, Wendell P., Charlestown, Mass. Emery polishing-wheel, &c.	June 14, 1870
104,800	Van Meter, Stroud, Henderson, Ill. Churn.	June 23, 1870
103,217	Vannatta, Henry, Jefferson, Ill. Ditching-machine.	Oct. 11, 1870
	Van Ness, Cornelious. (See Hares, Thomas A., assignor.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
107,569	Van Norman, Antoine L., Clinton, La. Washing-machine.	Sept. 20, 1870
	Van Nortwick, William M., and Mortimer M. Harsha. (See Harsha & Van Nortwick.)	
99,121	Van Nossdall, James M. and Oliver W., Newark, Ill. Hedge-trimmer	Jan. 25, 1870
104,380	Van Orden, Edward, New York, N. Y. Machine for making roofing-felting	June 14, 1870
100,694	Van Patten, A., and J. F. Kelsey, Weyauwega, Wis. Sash-holder	Mar. 8, 1870
109,781	Van Patten, Frederick, assignor to self, E. D. Clapp, and M. S. Fitch, Auburn, N. Y. Die for forging fifth-wheel boards	Nov. 29, 1870
109,782	Van Patten, Frederick, and Emerous D. Clapp, assignors to selves and M. S. Fitch, Auburn, N. Y. Stump-joint for carriage-top braces	Nov. 29, 1870
102,627	Van Patten, Silas, Albany, N. Y. Elastic tip for legs of chairs, &c.	May 3, 1870
105,743	Van Pelt, Samuel D., Anderson, Ind. Hinge	July 26, 1870
107,129	Van Riper, Daniel W., Columbus, Ga. Photographic background	Sept. 6, 1870
105,145	Van Riper, Richard, Brooklyn, N. Y. Machine for fluting moldings	July 5, 1870
103,107	Vansandt, Horace, Middletown, Conn. Bracket for supporting stove-pipe shelves.	May 17, 1870
	Van Sandt, Elisha, <i>et al.</i> (See Mellen, Van Sandt & Palmer.)	
105,403	Van Scoyoc, William, Oxford, Ohio. Washing-machine	July 12, 1870
98,648	Van Sickle, Garrett, assignor to self and William H. Van Sickle, Shorterville, N. Y. Pitchfork	Jan. 4, 1870
105,015	Van Slooten, Jan., Caleb S. Hunt, and William McCulloch, New Orleans, La. Pipe-cleansing apparatus	July 5, 1870
4,073	Van Slyke, Manuel, and David W. Wood, Rome, N. Y. Car-coupling. (Reissue)	July 12, 1870
103,108	Van Steenberg, Joseph, Chicago, Ill. Car-coupling	May 17, 1870
100,823	Vanstone, Samuel, Providence, R. I. Die for making clinch-rings	Mar. 15, 1870
104,904	Same. Method of manufacturing axle-nuts	June 28, 1870
104,905	Same. Wrought-iron coupling-pipe	June 28, 1870
110,516	Van Syckel, Samuel, Titusville, Pa. Still for petroleum and other oils	Dec. 27, 1870
99,265	Van Tassell, Theodore, and R. Starr Pollock, San Francisco, Cal. Smoothing-iron handle	Jan. 25, 1870
105,610	Van Vleck, Alexander, and Thomas Phillips, Jordan, N. Y. Mill-stone curb	July 19, 1870
102,337	Van Vleck, Matthew and Lawrence, Monroe, Wis. Spring bed-bottom	April 26, 1870
102,734	Van Vleeck, Livingstone B., New York, N. Y. Hand-stamp canceler. (Ante-dated March 16, 1870)	May 3, 1870
98,649	Van Wagoner, Thomas, Newark, N. J. Extension curtain-roller	Jan. 4, 1870
4,490	Van Wart, Ames, New York, N. Y. Statuary (Design)	Nov. 22, 1870
4,491	Same. Statnette (Design)	Nov. 22, 1870
98,722	Van Wert, J. L., Tolland, Mass. Horse-collar	Jan. 11, 1870
93,899	Same. Harness-saddle	Jan. 18, 1870
105,744	Van Wie, Isaac H., Clarksville, N. Y. Hollow auger	July 26, 1870
99,796	Van Wormer, M., Troy, Ohio. Fence	Feb. 15, 1870
109,082	Van Wyck, James T., Poughkeepsie, N. Y. Cultivator-rake	Nov. 8, 1870
99,376	Van Wyck, Theodore C., and William Kent, Poughkeepsie, N. Y. Regulator for machinery	Feb. 1, 1870
102,838	Varney, Charles, East Brimfield, Mass. Pegging-jack	May 10, 1870
104,668	Same. Pegging-machine	June 21, 1870
105,611	Varnum, Henry C., assignor to self and James E. Laskin, Hartford, Vt. Combined horse hay-rake and tedder	July 19, 1870
	Varwig, Henry. (See Knoche, John, assignor.)	
3,890	Vasseur, Hermann, assignor to Simpson, Hall, Miller & Co., Wallingford, Conn. Tea-set (Design)	Mar. 8, 1870
3,891	Same. Ice-pitcher (Design)	Mar. 8, 1870
4,440	Same. Fruit-stand (Design)	Oct. 25, 1870
4,441	Same. Tea-set (Design)	Oct. 25, 1870
107,426	Vater, Bernhard, New York, N. Y. Water-elevator	Sept. 13, 1870
186,971	Vaughan, Aaron C., assignor to self, James M. Sellers, and A. K. McClure, Philadelphia, Pa. Burner for locomotive head-lights	Aug. 30, 1870
108,656	Vaughan, George B., Marshall, Mo. Corn-planter	Oct. 25, 1870
107,985	Vaughan, Silas O. and Phincas W., De Kalb, Ill. Grinder for harvester-cutters	Oct. 4, 1870
	Vaughan, William H. (See Wheeler, Emery T., assignor.)	
	Vaughn, James A., and Grant B. Turner. (See Turner & Vaughn) (Reissue)	
99,980	Vaughn, Jerome A., Downieville, Cal. Horizontal wind-wheel	Feb. 15, 1870
101,065	Veasey, John M., Denver, Col. Ter. Sheet-metal seaming-machine	Mar. 22, 1870
101,328	Same. Caster for sewing-machines	Mar. 22, 1870
98,723	Vedder, Jerome B., Gloversville, N. Y. Railway-car coupling	Jan. 11, 1870
3,859	Vedder, Nicholas S., Troy, N. Y. Stove-plate (Design)	Feb. 22, 1870
3,860	Same. same (Design)	Feb. 22, 1870
3,861	Same. same (Design)	Feb. 22, 1870
104,084	Same. Heating-stove	June 7, 1870
3,862	Vedder, Nicholas S., Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to Nicholas S. Vedder. Stove-plate (Design)	Feb. 22, 1870
3,863	Same. Stove-plate (Design)	Feb. 22, 1870
3,864	Same. same (Design)	Feb. 22, 1870
3,865	Same. same (Design)	Feb. 22, 1870
3,866	Same. same (Design)	Feb. 22, 1870
4,240	Same. same (Design)	July 19, 1870
4,241	Same. same (Design)	July 19, 1870
4,242	Same. same (Design)	July 19, 1870
4,243	Same. same (Design)	July 19, 1870
4,244	Same. same (Design)	July 19, 1870
4,245	Same. same (Design)	July 19, 1870
4,360	Same. same (Design)	Sept. 20, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,054	Vedder, Nicholas S., Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to J. L. Mott. Stove-plate (Design).....	May 17, 1870
4,464	Same..... Range or stove (Design).....	Nov. 8, 1870
3,867	Vedder, Nicholas S., and Francis Ritchie, assignors to Nicholas S. Vedder, Troy, N. Y. Stove-plate (Design).....	Feb. 22, 1870
4,374	Same..... same (Design).....	Sept. 27, 1870
4,246	Vedder, Nicholas S., and Francis Ritchie, Troy, N. Y., and Tobias S. Heister, Lansingburgh, N. Y., assignors to Nicholas S. Vedder. Stove-plate (Design).....	July 19, 1870
109,692	Veer, Andrew A., Delaware, Ohio. Buffer and catch for doors.....	Nov. 23, 1870
103,612	Velie, Henry C., Poughkeepsie, N. Y. Harvester.....	July 19, 1870
110,174	Same..... Upholstering-spring.....	Dec. 13, 1870
101,405	Velte, William, and John Fagan, Pittsburgh, Pa. Ice-house.....	Mar. 29, 1870
	Vera, Silas L., and William P. Lewis. (See Lewis & Vera.)	
107,640	Verbeck, Amos, Sterling, Ill. Grinding-mill.....	Sept. 20, 1870
100,219	Verity, James H., Lansing, Mich. Fruit-ladder.....	Feb. 22, 1870
	Vermillion, James. (See Street, James R., assignor.)	
	Vernam, William D. (See Kenyon, Silas R., assignor.)	
103,259	Vernon, William E., Franklin County, Mo. Corn-planter.....	May 17, 1870
109,277	Vetterlin, Frederick, Switzerland. Breech-loading fire-arm. (Antedated Nov. 11, 1870).....	Nov. 15, 1870
110,313	Vicars, Thomas, sr. and Thomas, jr., and James Smith, England. Boiler-furnace.....	Dec. 20, 1870
103,819	Vickers, John H., assignor to William A. Aiken, Norwich, Conn. Door-latch.....	May 31, 1870
100,470	Vickery, Thomas, Providence, R. I. Knife-sharpener.....	Mar. 1, 1870
103,412	Vickery, William P., East Auburn, Me. Rotary steam-engine.....	Oct. 18, 1870
103,689	Vidal, Ulysses B., Philadelphia, Pa. Lock-nut.....	May 31, 1870
101,790	Vienot, Louis F., New York, N. Y. Counter and show-case.....	April 12, 1870
102,070	Vigneron, Charles, Providence, R. I. Machine for molding glass buttons.....	April 19, 1870
105,521	Vignal, Carl, New York, N. Y. Ice-cream refrigerator.....	July 19, 1870
	Viles, George. (See Batchelder, William W., assignor.)	
99,981	Villard, Frederick, Mount Eaton, Ohio. Grain-drill tooth.....	Feb. 15, 1870
99,982	Same..... Hay and manure fork.....	Feb. 15, 1870
99,983	Same..... Chimney-cowl.....	Feb. 15, 1870
	Vincent, Jonathan, <i>et al.</i> (See Shaw, Walter, assignor.)	
105,522	Vincent, Victor, New York, N. Y. Platform-scale.....	July 19, 1870
	Vine, Robert, <i>et al.</i> (See Warner, Walton & Vine.)	
101,791	Vining, Edward P., Grand Rapids, Mich. Railway-car brake.....	April 12, 1870
100,824	Vining, Elijah H., Covington, Ga. Grinding-mill.....	Mar. 15, 1870
	Vinson, John T. (See Thompson, Thomas, assignor.)	
109,278	Violet, John H., Goshen, Ind. Hoisting-apparatus.....	Nov. 15, 1870
104,381	Vivarttas, Aloha, assignor to self and John W. Keene, New York, N. Y. Machine for making netting.....	June 14, 1870
	Voelter, Henry, Germany. Reducing wood-fiber to paper-pulp. (Extension).....	Aug. 26, 1870
102,338	Vogel, Annie, New York, N. Y., and Fannie Krebs, Georgetown, D. C. Hair-curling pin.....	April 26, 1870
106,892	Vogel, Charles, New York, N. Y. Compressed-air forge-hammer.....	Aug. 30, 1870
102,889	Vogt, David, Trenton, Mich. Harness-buckle.....	May 10, 1870
103,945	Same..... Washing-machine.....	June 7, 1870
107,130	Vogt, John H., and George Dietzel, New York, N. Y. Hair-roll.....	Sept. 6, 1870
100,220	Voigt, Edward, Philadelphia, Pa. Automatic latch.....	Feb. 22, 1870
101,684	Voigt, Edward, and Philip P. Mathes, Philadelphia, Pa. Lock.....	April 5, 1870
102,184	Volk, John H., Chicago, Ill. Machine for grinding and polishing marble.....	April 19, 1870
107,570	Volkert, Christoph, New York, N. Y. Button-machine.....	Sept. 20, 1870
	Volkman, Frederick. (See Günther, Carl, assignor.)	
102,451	Volkmar, George D., Baltimore, Md. Metal-roof protector. (Antedated April 15, 1870).....	April 26, 1870
109,977	Vollum, Samuel S., and William H. Green, New York, N. Y. Carriage-wheel lubricator.....	Dec. 6, 1870
105,523	Von Doehren, E. H. Gustav, and Frederick P. L. Reimers, Davenport, Iowa. Sad-iron.....	July 19, 1870
	Von Ficht, John, and Joseph Heine. (See Heine & Von Ficht.)	
105,146	Von Jeinsen, Ernest, Omaha, Nebr. Self-acting lubricator for axle-boxes.....	July 5, 1870
105,147	Same..... Automatic lubricator.....	July 5, 1870
106,096	Same..... Lubricating-journals of railway axle-boxes.....	Aug. 2, 1870
107,739	Same..... San Francisco, Cal. Lubricator.....	Sept. 27, 1870
109,159	Same..... Omaha, Nebr. Journal-box for cars.....	Nov. 8, 1870
	Same..... (See Goodman, Henry A., assignor.)	
103,801	Voorhis, Oliver W., Smith H. Mapes, and William M. Voorhis, Lawrence, Ind. Combined ditching and tile-laying machine.....	May 31, 1870
104,906	Vorse, Addison S., Des Moines, Iowa. School-desk seat.....	June 28, 1870
	Vosburg, Isaac N. (See Boynton, Charles E., assignor.)	
104,907	Vose, Richard, New York, N. Y. Railway-car spring.....	June 28, 1870
105,524	Same..... Car-spring.....	July 19, 1870
	Vose, Richard, administrator. (See Bullock, William.) (Two cases.)	
107,312	Voss, Frederick, John P. Hax, and Henry Krug, St. Joseph's, Mo. Device for catching and holding hogs.....	Sept. 13, 1870
107,641	Vrooman, Henry S., Boston, Mass. Rounding-up machine for shoes.....	Sept. 20, 1870
	Vulcan Peat-Manufacturing Company. (See Lyons, James B., assignor.)	
	Vulcanite Jewelry Company. (See Rice, George S., assignor.)	
99,984	Wackerman, John V., Buffalo, N. Y. Washing-machine.....	Feb. 15, 1870
106,239	Waddell, Joseph P., Brook Haven, Mass. Medical compound or pill.....	Aug. 9, 1870
100,953	Waddington, George, Le Roy, Ill. Combined hedge-trimmer and mower.....	Mar. 15, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,935	Wade, James C., Boston, Mass. Shuttle for sewing-machines. .... (Reissue) ..	April 26, 1870
102,452	Wadsworth, Henry, Duxbury, Mass. Pump .....	April 26, 1870
105,745	Waffle, Charles L., Sharon Centre, Ohio. Cultivator .....	July 26, 1870
107,427	Wagener, David S., Franklin, Mass. Method of grafting .....	Sept. 20, 1870
106,747	Wager, John L., and Adam L. Scudder, Sanford, N. Y. Calk for boots and shoes ..	Aug. 23, 1870
106,748	Waggoner, Edward P., Syracuse, N. Y. Skate .....	Aug. 23, 1870
	Waggoner, William H., and E. A. Wareham. (See Wareham & Waggoner.)	
100,221	Wagner, A. H., Chicago, Ill. Gearing for harvesters .....	Feb. 22, 1870
108,069	Same. .... Harvester .....	Oct. 4, 1870
103,947	Wagner, Elijah, Westminster, Md. Cotton and corn planter. (Antedated Oct. 21, 1870) ..	Nov. 1, 1870
106,520	Wagner, Franz, New York, N. Y. Vegetable-cutter .....	Aug. 16, 1870
109,359	Same. .... Fluid-meter .....	Nov. 15, 1870
99,266	Wagner, Franz, assignor to self, John W. Crump, and William A. Lynch, New York, N. Y. Liquid-meter .....	Jan. 25, 1870
4,040	Wagner, Franz, assignor through mesne assignments to José F. de Navarro, New York, N. Y. Liquid-meter .....	June 21, 1870
106,004	Wagner, Jacob R., Manada Hill, Pa. Combined harrow, cultivator, wheelbarrow, and sled .....	Aug. 2, 1870
105,280	Wahle, Lorenz, Davenport, Iowa. Fire-escape .....	July 12, 1870
108,070	Wahler, Henry, Henry Metz, and Ludwig Heingle, Freeport, Ill. Sausage-stuffer ..	Oct. 4, 1870
	Wahlig, Alexander, and Charles S. Chaffee. (See Chaffee & Wahlig.)	
	Wailles, Sydney Irving. (See Kopas, John O., assignor.)	
98,724	Wailey, C. W., assignor to New Orleans Pneumatic Propelling Company, New Orleans, La. Cut-off valve-gear .....	Jan. 11, 1870
100,569	Wait, William W., Richmond, Ind. Bed-bottom .....	Mar. 8, 1870
107,642	Waite, Enoch, Franklin, Mass. Fabric for the manufacture of shoes, &c. ....	Sept. 20, 1870
4,173	Waite, Enoch, assignor to self and Stephen M. Weld, Franklin, Mass. Fabric for the manufacture of shoes, &c. .... (Reissue) ..	Nov. 1, 1870
107,131	Waite, James H., assignor to Rodney Hunt, James H. Waite, and Daniel B. Flint, Orange, Mass. Bedstead-fastening .....	Sept. 6, 1870
103,260	Wakefield, Charles A., Pittsfield, Mass. Earth-closet .....	May 17, 1870
102,628	Wakeman, Joseph B., and Alfonso B. Field, Hamden, N. Y. Washing and wringing machine .....	May 3, 1870
103,946	Wakeman, Joseph B., and Alonzo M. Bush, Hancock, N. Y. Coffee and tea steeper .....	June 7, 1870
110,610	Walbank, Samuel S., Superior City, Wis. Compound for treating leather. ....	Dec. 27, 1870
	Walborn, Cornelius A. (See Kitson, Laning & Bennor, assignors.)	
	Walden, Philo, et al. (See Lawrence, Walden & Huntoon.)	
4,543	Waldo, A. G., and Jonathan Mills. (See Mills & Waldo) .....	(Two cases.)
103,947	Waldron, Josiah V. and Charles F., New York, N. Y. Chain .....	Dec. 27, 1870
	Walenn, William Henry, England. Electro-deposition of copper and brass on iron and steel. (Patented in England Dec. 24, 1868) ..	June 7, 1870
3,942	Wales, Thomas C., Dorchester, Mass. Water-proof shoe .....	April 26, 1870
107,986	Walker, Albert A., assignor to William C. Leyburn and George A. Fisk, Sparta, Wis. Thrasher and separator .....	Oct. 4, 1870
105,525	Walker, Alfred, Portland, Me. Regulator for steam-heating apparatus .....	July 19, 1870
101,396	Walker, Alpheus, Worcester, Mass. Trowel .....	Mar. 29, 1870
101,792	Walker, Ellery A., Hyannis, Mass. Piston-packing .....	April 12, 1870
3,943	Walker, Emory P., Belchertown, Mass. Butter-worker .....	April 26, 1870
100,059	Walker, George, Middletown, N. Y. Saw-grinding machine .....	Feb. 22, 1870
102,735	Walker, George W., Malden, Mass. Refrigerator .....	May 3, 1870
108,852	Same. .... Cooking-stove .....	Nov. 1, 1870
105,413	Walker, Henry Balen, New York, N. Y. Heating-table for silvering glass. (Antedated Oct. 1, 1870) ..	Oct. 18, 1870
110,408	Same. .... Silvering glass .....	Dec. 20, 1870
	Walker, James, Isaiah D., and Ivan N. (See Hagan, Jno. C., assignor). (Reissue.)	
100,222	Walker, James T., Albany, N. Y. Machine for making horseshoes .....	Feb. 22, 1870
108,948	Walker, Joseph H., Worcester, Mass. Boot .....	Nov. 1, 1870
100,695	Walker, Loudus B., Chicago, Ill. Planing-machine .....	Mar. 8, 1870
	Walker, Nelson A., and George Bradley. (See Bradley & Walker.)	
105,526	Walker, Rebecca J., Goshen, Ohio. Mode of protecting fruit-trees from curculio, &c .....	July 19, 1870
102,185	Walker, Redford W., Washington, D. C. Carpet-fastener .....	April 19, 1870
106,098	Same. .... Device for moistening and closing envelopes .....	Aug. 2, 1870
106,005	Walker, Robert E., Dresden, Mo. Carriage-spring .....	Aug. 2, 1870
105,527	Walker, Thomas, Philadelphia, Pa. Quartz-mill .....	July 19, 1870
108,854	Walker, Thomas, assignor to George H. Wooster, Brooklyn, N. Y. Plaiting-device .....	Nov. 1, 1870
108,855	Same. .... Plaiting-device .....	Nov. 1, 1870
99,733	Walker, Thomas George, New York, N. Y. Expelling volatile matter from peat and other materials .....	Feb. 8, 1870
108,853	Same. .... Expelling volatile matters from peat .....	Nov. 1, 1870
110,175	Walker, William, Odin, Ill. Mechanical movement .....	Dec. 13, 1870
107,571	Walker, William, assignor to self and Robert O. Tripp, Woodside, Cal. Car-coupling .....	Sept. 20, 1870
110,409	Walker, William P., and Ernest Henry Leseman, Toledo, Ohio. Scrubber and mop .....	Dec. 20, 1870
	Wall, Carl O., and Olof Johnson. (See Johnson & Wall.)	
99,503	Wall, Charles, New York, N. Y., and John Stewart, Brooklyn, N. Y. Drawing-frame for flax, hemp, &c. ....	Feb. 1, 1870
	Wall, William, et al. (See Enright, John, assignor.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,321	Wallace, Abijah, assignor to the Tanite Company, Stroudsburg, Pa. Frame of an emery-girder..... (Design)...	Aug. 30, 1870
101,948	Wallace, Ferrand G., Syracuse, N. Y. Wheel for vehicles.....	April 12, 1870
106,893	Wallace, John H. (See Herrick, Bryant B., assignor.)	
4,155	Wallace, Marshall, Little Rock, Ark. Hay and cotton press.....	Aug. 30, 1870
4,069	Wallace, Robert, Wallingford, Conn. Spoon-handle..... (Design)...	June 14, 1870
	Wallace, Robert, assignor to Meriden Britannia Company, Wallingford, Conn. Sugar-tongs..... (Design)...	May 24, 1870
4,070	Same..... same..... (Design)...	May 24, 1870
4,071	Same..... same..... (Design)...	May 24, 1870
4,072	Same..... same..... (Design)...	May 24, 1870
4,073	Same..... same..... (Design)...	May 24, 1870
4,074	Same..... same..... (Design)...	May 24, 1870
104,232	Wallace, William, assignor to self and Charles McAllister, Philadelphia, Pa. Carpet-fabric.....	June 14, 1870
102,990	Wallach, Henry, New York, N. Y. Shirt.....	May 10, 1870
100,471	Walling, John, Plymouth, Ind. Sawing-machine.....	Mar. 1, 1870
108,856	Walls, Martin, and Thomas J. Hamer. (See Hamer & Walls.)	
	Walmsley, James and Thomas, Great Britain. Warping-machine.....	Nov. 1, 1870
99,036	Walsh, Arthur, and James P. Sibley. (See Sibley & Walsh.)	
4,010	Walsh, Cornelius, Newark, N. J. Trunk-hasp..... (Design)...	Jan. 18, 1870
	Same..... Trunk-lock..... (Design)...	May 3, 1870
99,037	Same..... (See Coeller, Friedrich, assignor.)	
108,071	Walsh, James, Philadelphia, Pa. Hydrant.....	Jan. 18, 1870
110,518	Walsh, James F., Hazel Green, Wis. Cap for horse-collars.....	Oct. 4, 1870
	Same..... Horse-collar pad.....	Dec. 27, 1870
99,038	Walsh, John, and David Alcorn. (See Alcorn & Walsh.)	
108,538	Walsh, P. R., and G. C. Eaton, Rochester, N. Y. Pruning-shears.....	Jan. 18, 1870
	Walsh, Samuel, New York, N. Y. Sink.....	Oct. 18, 1870
	Walsh, Samuel A. (See Keen, Morris L., assignor.)..... (Two cases.)	
	Same..... (See Kranse, Frederick C., assignor.)	
108,857	Walter, John. (See Sheaffer, Alfred B., assignor.)	
107,132	Walter, John A., and Eli Bushman, White House, Pa. Corn-plow.....	Nov. 1, 1870
104,382	Walter, Martin F., and Charles Standing, Hartford, Conn. Heel-calk.....	Sept. 6, 1870
	Walter, Rudolph L., Washington, D. C. Paper or paper and cloth neck-tie. (Antedated June 4, 1870.).....	June 14, 1870
100,343	Walter, Thomas, Philadelphia, Pa. Broom.....	Mar. 1, 1870
102,453	Walter, William P., Philadelphia, Pa. Holder for fruit-jars.....	April 26, 1870
109,472	Walton, Albert G., San Francisco, Cal. Device for exhibiting photographic pictures.....	Nov. 22, 1870
105,528	Walton, Elisha W., San Leandro, Cal. Gang-plow.....	July 19, 1870
105,529	Same..... Weed-cutter.....	July 19, 1870
100,223	Walton, Gustavus, Minneapolis, Minn. Shingle-machine.....	Feb. 22, 1870
102,403	Walton, Henry R., Philadelphia, Pa. Hay and cotton press.....	April 26, 1870
	Walton, Jacob W., et al. (See Warner, Walton & Vine.)	
107,133	Walton, Jeremiah W., Decatur, Mich. Wagon-jack.....	Sept. 6, 1870
	Walton, Joseph J. (See White, Robert, assignor.)	
	Same..... (See Gair, John, assignor.)	
109,563	Walton, William W., Roanoke, Ind. Shoe-fastening for shoe-boxes.....	Nov. 22, 1870
	Walworth, Caleb C., Boston, Mass. Vise..... (Extension)...	Sept. 24, 1870
103,396	Wampach, John, Shakopee, Minn. Bob-sled.....	May 24, 1870
98,532	Wangeman, Rudolph, Chicago, Ill. Stop for curtain-rollers.....	Jan. 4, 1870
108,218	Wanner, Albert, Hoboken, N. J. Handle for canes and umbrellas. (Antedated Oct. 1, 1870).....	Oct. 11, 1870
98,819	Wanner, Anthony, New York, N. Y. Velocipede. (Antedated Jan. 1, 1870).....	Jan. 11, 1870
101,191	Same..... Fire-proof building.....	Mar. 22, 1870
	Wansbrough, Henry W., and Richard T. Bradley. (See Bradley & Wansbrough.)	
109,473	Warburton, William F., Philadelphia, Pa. Ventilator for hats.....	Nov. 22, 1870
	Ward, A., et al. (See Rider, Leman P., assignor.)	
102,890	Ward, Aaron, assignor to self and Jesse Hiatt, Dublin, Ind. Harvester-dropper.....	May 10, 1870
	Ward, Alexander F., and Hugh A. Stringer. (See Stringer & Ward.)	
4,453	Ward, Benjamin A., Lynn, Mass. Frame..... (Design)...	Nov. 1, 1870
4,454	Same..... Bracket..... (Design)...	Nov. 1, 1870
4,455	Same..... same..... (Design)...	Nov. 1, 1870
4,456	Same..... Clock-front..... (Design)...	Nov. 1, 1870
	Ward, Benjamin A., et al. (See Bellamy, John H., assignor.) (Three cases.) (Design)...	
98,650	Ward, B. F., Indian Springs, Ga. Cultivator.....	Jan. 4, 1870
	Ward, Daniel, and John Freeland. (See Freeland & Ward.)	
107,740	Ward, Edward, Smyrna, Del. Oyster-tongs.....	Sept. 27, 1870
103,530	Ward, Eugene, assignor to self, Francis C. Butler, and Elias S. Ward, Newark, N. J. Manufacture of winkers for harness-bridles.....	May 24, 1870
	Ward, Henry C., and Charles Colby. (See Colby & Ward.)	
	Ward, James W., et al. (See Baird, James W., assignor.)	
110,314	Ward, John D., assignor to self and William F. Jones, Baltimore, Md. Thermometer.....	Dec. 20, 1870
107,838	Ward, John F., Jersey City, N. J. Water-pipe.....	Sept. 27, 1870
107,134	Ward, Lorenzo R., Ward's Corner, Iowa. Breast-strap protector for harness.....	Sept. 6, 1870
103,307	Ward, Luther, Trenton, N. J. Machine for sawing stone.....	Oct. 11, 1870
	Ward, Mina, and Abner McOmber. (See McOmber & Ward.)	
106,521	Ward, R., Edinburgh, Ind. Stove-grate.....	Aug. 16, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,519	Ward, Rivera, Newark, N. J. Toy-hoop.....	Dec. 27, 1870
108,858	Ward, Samuel W. H., New York, N. Y. Toilet-box.....	Nov. 1, 1870
101,192	Ward, Thomas, Columbus, Ohio. Fluid-lamp.....	Mar. 22, 1870
102,339	Same.....Franklin County, Ohio. Vapor-burner.....	April 26, 1870
106,522	Same.....Columbus, Ohio. Vapor-burner.....	Aug. 16, 1870
105,016	Ward, Walter, Mount Holly, N. J. Spike-extractor.....	July 5, 1870
110,176	Ward, Wesley G., Fayette, N. Y. Nail-extractor.....	Dec. 13, 1870
110,177	Ward, Wesley G., assignor to self and Abram M. Flickinger, Fayette, N. Y. Pump.....	Dec. 13, 1870
101,793	Ward, William, Pittsburgh, Pa. Coal-digging apparatus.....	April 12, 1870
99,504	Ward, William G., Edgewater, N. Y. Breech-loading fire-arm.....	Feb. 1, 1870
103,397	Ward, William H., Auburn, N. Y. Machine for rolling metals. (Antedated May 14, 1870).....	May 24, 1870
103,398	Same.....Gear-wheel.....	May 24, 1870
103,399	Same.....Housing for metal-rolling mills.....	May 24, 1870
108,539	Same.....Adjustable gear-wheel.....	Oct. 18, 1870
	Ward, William S., and Edward Jones Mallett, jr. (See Mallett & Ward.)	
	Warden, Americus, and Jacob Fricker. (See Fricker & Warden.)	
110,093	Wardrobe, James, Charles D. B. Fisk, John F. Curtis, and George Fetley, Carlin, Nev. Railway axle-box.....	Dec. 13, 1870
99,797	Wardwell, George J., Rutland, Vt. Harvester-knife. (Antedated Feb. 6, 1870).....	Feb. 15, 1870
105,391	Same.....Stone-channeling machine.....	July 12, 1870
	Ware, Charles. (See Haviland, Richard, assignor.)	
106,894	Ware, Daniel B., Athens, Mich. Miter-machine.....	Aug. 30, 1870
107,572	Ware, William Powell, New York, N. Y. Shoe-fastening. (Antedated Sept. 5, 1870).....	Sept. 20, 1870
107,313	Wareham, E. A., and William H. Waggoner, Kirkville, Iowa. Mechanism for operating the pickers of looms.....	Sept. 13, 1870
109,693	Warfel, Henry C., Philipsburgh, Pa. Oil-can.....	Nov. 29, 1870
101,193	Warfield, Alexander, Alexandria, Va. Manufacture of soap.....	Mar. 22, 1870
108,540	Same.....Philadelphia, Pa. Manufacture of soap.....	Oct. 18, 1870
	Same.....same.....(Disclaimer filed).....	Oct. 6, 1870
	Waring, John T. (See Eickemeyer, Rudolf, assignor).....(Reissue.)	
	Same.....same.....	
	Warker, Thomas, and Carl Schultz. (See Schultz & Warker.)	
108,308	Warne, Mahlon, Philadelphia, Pa. Head-rest.....	Oct. 11, 1870
	Warner, Charles. (See Evans, William J., assignor.)	
105,148	Warner, Edward E., Jacob W. Walton, and Robert Vine, Philadelphia, Pa. Metal-backed comb.....	July 5, 1870
101,794	Warner, Effingham H. N., New York, N. Y. Shirt-bosom and wrist-band combined.....	April 12, 1870
105,149	Warner, Egbert L., Oxford, Conn. Baby-jumper.....	July 5, 1870
	Warner, Ezra J., and John H. Squier. (See Squier & Warner.)	
110,520	Warner, Francis F., Chicago, Ill. Adding-machine.....	Dec. 27, 1870
106,895	Warner, George, Des Moines, Iowa. Extensible gas-pendant. (Antedated Aug. 24, 1870).....	Aug. 30, 1870
109,279	Warner, Horace, Ridgway, Pa. Washing-machine.....	Nov. 15, 1870
98,820	Warner, J. S., Ogdensburgh, N. Y. Chuck for grinding crystals.....	Jan. 11, 1870
99,122	Same.....Thread-tension device for sewing-machines.....	Jan. 25, 1870
105,530	Warner, L. A., Freeport, Ill. Corn-popper and coffee-roaster.....	July 19, 1870
4,120	Warner, Nathan S., Bridgeport, Conn. Toy-velocipede.....(Reissue).....	Sept. 13, 1870
109,474	Warner, Samuel H., Darbyville, Ohio. Underground drain.....	Nov. 22, 1870
100,224	Warner, Stanton D., and Owen W. Thomas, Richmond, Ill. Apparatus for producing butter from cream.....	Feb. 22, 1870
98,651	Warner, William Y., and James Crooks, Wilmington, Del. Apparatus for tanning hides and skins.....	Jan. 4, 1870
105,746	Warren, Benjamin F., Fishkill, N. Y. Cooking-stove.....	July 26, 1870
103,261	Warren, Charles, Centre Groton, Conn. Saw-mill.....	May 17, 1870
104,383	Warren, Charles C., and James B. Baldy, Toledo, Ohio. Process for cleaning and polishing coffee.....	June 14, 1870
109,978	Same.....Machine for polishing coffee.....	Dec. 6, 1870
	Warren, Edmond A., and William C. Hornfager. (See Hornfager & Warren.)	
102,891	Warren, Edward, Ceresco, Mich. Hoe.....	May 10, 1870
	Warren, Edwin R. (See Hall, Alexander, assignor.)	
	Warren, Edwin W., and Alfred Woodworth. (See Woodworth & Warren.)	
104,669	Warren, Horace, Leicester, Mass. Hay-loader.....	June 21, 1870
102,186	Warren, John, Flushing, N. Y. Still for petroleum.....	April 19, 1870
101,329	Warren, John L., assignor to George and Samuel Hargreaves, Detroit, Mich. Oval-turning tool.....	Mar. 29, 1870
	Warren, Lewis L. (See Reed, Eden, assignor.)	
108,414	Warren, Lorenzo D., Havana, Ill. Lifting-jack.....	Oct. 18, 1870
	Warren, Spadone & Co. (See Peloubet, David A., assignor.)	
102,892	Warren, Sylvester W., assignor to self and George B. Parrott, Boston, Mass. Lamp-chimney.....	May 10, 1870
106,099	Warren, Thomas E., Shelburne Falls, Mass. Adjustable gauge.....	Aug. 2, 1870
109,160	Warren, William J., Philadelphia, Pa. Privy.....	Nov. 8, 1870
104,053	Warriner, Ralph, James H. Baker, and George B. Slocum, Saratoga Springs, N. Y. Machine for husking corn.....	June 7, 1870
104,801	Warring, Charles B., Poughkeepsie, N. Y. Heating-stove.....	June 28, 1870
	Warrior Mower Company. (See Black, Henry, assignor).....(Reissue.)	



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
100,090	Warsop, George, England. Steam and air engine. (Patented in England Sept. 8, 1868)	Feb. 22, 1870
102,893	Warth, Albin, Stapleton, N. Y., and Philip Hufeland and George Braun, New York, N. Y., assignors to Eberhard Faber. Machine for varnishing pencils, &c.	May 10, 1870
102,187	Warth, Albin, Stapleton, N. Y. Stop-valve for petroleum-packages	April 19, 1870
102,188	Same..... Tap for liquid-packages	April 19, 1870
105,150	Same..... same	July 5, 1870
105,613	Same..... Bung	July 19, 1870
106,160	Same..... same	Aug. 2, 1870
106,101	Same..... Machine for cutting textile and other materials	Aug. 2, 1870
108,072	Same..... Rendering leather impervious to hydrocarbon liquids	Oct. 4, 1870
109,360	Same..... Funnel	Nov. 15, 1870
110,611	Same..... Tap for oil-packages	Dec. 27, 1870
110,612	Same..... same	Dec. 27, 1870
109,161	Washburn, A. W., Yazoo City, Miss. Cotton-seed planter..... (Extension)	Mar. 16, 1870
98,725	Washburn, Darwin E. (See Shuttleworth, George L., assignor.)	Nov. 8, 1870
	Washburn, George I., Worcester, Mass. Mode of operating valves in steam-engines.....	Jan. 11, 1870
	Washburn, S., et al. (See Newell, Daniel P., assignor.)	
105,392	Washburn, William L., New York, N. Y. Grinding-apparatus.....	July 12, 1870
108,415	Washington, Beverly H., Columbia County, Ga. Cotton-planter and fertilizer-distributor	Oct. 18, 1870
103,416	Washington, H. W., Macon, Green Plains, Va. Safety-device for lamps	Oct. 18, 1870
100,570	Wassell, Edwin, Wood's Run, Pa. Machine for making horseshoes	Mar. 8, 1870
104,233	Waste, Charles, Galesburgh, Ill. Hay-gatherer	June 14, 1870
	Waterbury Brass Company. (See Hayden, Hiram W., assignor.) (Two cases.) (Reissue.)	
	Same..... (See Hoxsie, David K., assignor)..... (Two cases.)	
102,629	Waterbury, Charles G., New York, N. Y. Stone pavement	May 3, 1870
102,991	Same..... Wooden street-pavement	May 10, 1870
	Waterbury Clock Company. (See Dunn, Robert, assignor.) (Five cases.) (Design.)	
110,521	Waterbury, Enos and George N., assignors to G. N. Waterbury and A. M. Prior, Stamford, Conn. Windlass	Dec. 27, 1870
102,454	Waterhouse, Addison Goodyear, San Francisco, Cal. Rotary mechanical movement	April 26, 1870
101,194	Waterhouse, William R., Liverpool, N. Y. Sliding-door	Mar. 22, 1870
100,472	Waterman, Julius, assignor to Waterman & Mayer, New York, N. Y. Bosom-pad	Mar. 1, 1870
101,195	Same..... Hoop-skirt	Mar. 22, 1870
106,639	Waters, Alonzo M., assignor to self and Henry E. Mariner, Cuyahoga Falls, Ohio. Lifting-jack	Aug. 23, 1870
100,344	Waters, G., Cincinnati, Ohio. Feed-water filter	Mar. 1, 1870
106,972	Waters, Gardner, assignor of one-fourth interest to James J. Butler, Cincinnati, Ohio. Feed-water heater	Aug. 30, 1870
108,657	Waters, Jason, West Sutton, Mass. Press for removing liquid matter from various substances	Oct. 25, 1870
	Waters, Richard C. (See Benson, Charles W., assignor.)	
103,531	Waters, Wilbur F., Dunkirk, N. Y. Machine for putting together and tiring wheels	May 24, 1870
106,006	Watkins, Gardner A., assignor to self and Calvin S. Greenwood, Cavendish, Vt. Saw-table for sawing irregular forms	Aug. 2, 1870
107,135	Watkins, Gardner A., assignor to the American Chair-Seat Company, Cavendish, Vt. Machine for grooving the frames of chair-seats	Sept. 6, 1870
107,136	Same..... Chair-seats	Sept. 6, 1870
107,137	Same..... same	Sept. 6, 1870
99,377	Watkins, William, Joliet, Ill. Subsoil-plow	Feb. 1, 1870
102,992	Watkins, William B., Jersey City, N. J. Thermostat fire-alarm	May 10, 1870
109,475	Watrous, Leonard, Mystic River, Conn. Electro-plating with nickel the metallic parts of cotton-gins	Nov. 22, 1870
	Watson, Addison, and John Campbell. (See Campbell & Watson.)	
104,802	Watson, Alfred, Jersey City, N. J. Hot-air register	June 28, 1870
	Watson, Charles. (See Richmond, Edwin Adison, assignor.)	
103,690	Watson, Charles S., Philadelphia, Pa. Low-water indicator for boilers. (Ante-dated Jan. 29, 1870)	May 31, 1870
106,240	Watson, Edward, and Richard H. Norris, Paterson, N. J. Show-case	Aug. 9, 1870
107,373	Watson, Edward K., Shokan, N. Y. Propelling canal-boats	Sept. 20, 1870
	Watson, Elvy L., and Robert Darlington. (See Darlington & Watson.)	
	Watson, Ezra W., and David Mead. (See Mead & Watson.)	
98,821	Watson, James, Philadelphia, Pa. Milling-machine	Jan. 11, 1870
100,473	Same..... Lathe	Mar. 1, 1870
101,571	Watson, John J., assignor to self and Hiram Watson, Coatesville, Pa. Stove-shelf and drier. (Ante-dated March 1, 1870)	Mar. 8, 1870
100,474	Watson, J. P., Rochester, Minn. Cistern cut-off	Mar. 1, 1870
108,859	Watson, Royal H., Lapeer, Mich. Machine for making wooden pins	Nov. 1, 1870
	Watson, Samuel. (See Ogborn, Harrison, assignor.)	
108,658	Watson, Thomas, Nevada City, Cal. Hydraulic mining-apparatus	Oct. 25, 1870
104,803	Watson, Thomas, and Charles Perry, Brooklyn, N. Y. Extension-ladder. (Ante-dated June 23, 1870)	June 28, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,094	Watson, Thomas, and Charles Perry, Brooklyn, N. Y. Extension-ladder.....	Dec. 13, 1870
100,825	Watson, W. M., Tonica, Ill. Die or former for making double-shinned mold-board blanks for plows .....	Mar. 15, 1870
106,523	Same.....Motive power .....	Aug. 16, 1870
106,896	Watt, James B. and John C., Greene County, Ohio. Seeding-plow and planter..	Aug. 30, 1870
101,685	Wattles, Hiram J., Rockford, Ill. Vegetable-washer.....	April 5, 1870
104,516	Same.....Shield for gas-burners.....	June 21, 1870
109,533	Wattles, Joseph W., Canton, Mass. Suspender .....	Dec. 6, 1870
99,378	Watts, William H. (See Scattergood, E. B., assignor.)	
	Waud, Edward, Eugene City, Oreg. Spark-arrester.....	Feb. 1, 1870
	Way, Charles. (See Marble, George W., assignor.)	
	Way, William B., <i>et al.</i> (See Dyer, Parker & Way.)	
102,340	Wayland, James, New York, N. Y. Spring .....	April 26, 1870
	Waymoth, A. D., Fitchburgh, Mass. Machine for manufacturing spools... (Extension)	July 23, 1870
104,670	Weatherbee, Paul, Port Washington, Ohio. Car-coupler .....	June 21, 1870
102,736	Weathers, Columbus M., Rochefort, Mo. Straw-cutter.....	May 3, 1870
106,749	Weathers, James, assignor to self and V. P. Harris, Greensburgh, Ind. Wall for buildings .....	Aug. 23, 1870
103,691	Weaver, David H., South Bend, Ind. Horse hay-rake .....	May 31, 1870
	Weaver, E. F. and H. H. (See Hill, David R. P., assignor.)	
108,417	Weaver, Edward J., Sterling, Ill. Flour-bolt feeder .....	Oct. 18, 1870
106,434	Weaver, Horace S., Freeport, Pa. Railway .....	Aug. 16, 1870
101,550	Weaver, Horatio B., assignor to George S. and Charles L. Lincoln, Hartford, Conn. Feed for iron-planers.....	April 5, 1870
	Weaver, Horatio B., and James E. Gillespie. (See Gillespie & Weaver.)	
104,234	Weaver, James E., Temperanceville, Pa. Die for cutting screw-threads on bolts .....	June 14, 1870
104,908	Weaver, John G., jr., Cincinnati, Ohio. Manufacture of cast-pipe elbows.....	June 28, 1870
	Weaver, Reuben, and M. S. Nichols. (See Nichols & Weaver.)	
107,839	Weaver, Samuel, Pottstown, Pa. Meat-hook .....	Sept. 27, 1870
101,949	Weaver, Theophilus, Harrisburgh, Pa. Hand corn-sheller .....	April 12, 1870
107,138	Weaver, Thomas H., Marietta, Ohio. Churn-dasher.....	Sept. 6, 1870
104,671	Webb, Allen P., Charlestown, Mass. Coal-sifter .....	June 21, 1870
103,659	Webb, Ezra, New York, N. Y. Preserving wood .....	Oct. 25, 1870
98,726	Webb, Francis William, England. Steam-generator.....	Jan. 11, 1870
	Webb, Henry C., and John F. Cory. (See Cory & Webb.)	
	Webb, Isaac N. (See Gillespie & Hughes, assignors.)	
103,860	Webb, John W., Cotton Valley, Ala. Plow .....	Nov. 1, 1870
	Webb, L. E., <i>et al.</i> (See Bailey, John A., assignor.)	
109,979	Webb, Rodolphus L., New Britain, Conn. Twine-holder .....	Dec. 6, 1870
99,793	Webber, J. R., Morris, Ill. House-trimming .....	Feb. 15, 1870
104,672	Same.....Latch or fastener for doors.....	June 21, 1870
106,750	Same.....Coal-stove.....	Aug. 23, 1870
103,219	Webber, Leroy D., Laporte, Ind. Cooking-stove .....	Oct. 11, 1870
103,231	Webber, Lorenzo D., assignor to self and S. W. Shaller, Deep River, Conn. Sawing-machine.....	July 12, 1870
102,993	Webber, Nathan G., East Springfield, Pa. Cultivator.....	May 10, 1870
98,822	Webendorfer, Rudolf, assignor to self and Carl Beiter, New York, N. Y. Shuttle for looms .....	Jan. 11, 1870
105,747	Weber, Adam, New York, N. Y. Furnace for reburning bone-black and reducing ores .....	July 26, 1870
4,201	Same.....Furnace for burning bone-black and other substances .....	Dec. 13, 1870
105,151	Webster, Abel L., Cleveland, Ohio. Nozzle for cans and casks.....	July 5, 1870
105,152	Same.....Seam for cans .....	July 5, 1870
106,007	Same.....New York, N. Y. Faucet or tap .....	Aug. 2, 1870
106,008	Same.....Device for drawing liquids by compressed air.....	Aug. 2, 1870
	Webster, Albert, <i>et al.</i> (See Thorp, Joseph W., assignor.)	
106,435	Webster, Albert G., assignor to self and George T. Scudder, Troy, N. Y. Base-burning stove .....	Aug. 16, 1870
102,994	Webster, Benjamin B., East Haverhill, Mass. Implement for turning the edge of a shoemaker's buffing-knife.....	May 10, 1870
106,751	Webster, Dexter P., Boston, Mass. Seed-planter and fertilizer .....	Aug. 23, 1870
103,017	Webster, Edward, Hartford, Conn. Hot-air furnace.....	July 5, 1870
4,418	Webster, Eliza G., Brooklyn, N. Y. Tea and coffee service .....	Oct. 11, 1870
103,109	Webster, James, England. Manufacture and purifying of iron. (Antedated May 4, 1870)	May 17, 1870
103,802	Webster, John N., Peoria, Ill. Cherry-stoner .....	May 31, 1870
3,879	Webster, John T., assignor to Page, Wilder & Co., New York, N. Y. Carpet pattern .....	Mar. 1, 1870
3,880	Same.....Carpet-pattern .....	Mar. 1, 1870
4,139	Same.....Floor-cloth pattern .....	June 7, 1870
4,140	Same.....same .....	June 7, 1870
4,544	Webster, John T., assignor to Thomas Potter, Son & Co., New York, N. Y. Oil-cloth pattern .....	Dec. 27, 1870
4,545	Same.....same .....	Dec. 27, 1870
4,344	Webster, John T., New York, N. Y., and Albert E. Powers, Lansingburgh, N. Y., assignors to Deborah, Albert E., and Nathaniel B. Powers. Floor oil-cloth. (Design)	Sept. 6, 1870
100,696	Webster, Lewis T., Northfield, Mass. Plow.....	Mar. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,524	Webster, William, Washington, D. C. Sad-iron .....	Aug. 16, 1870
107,207	Weddington, Samuel C., Jonesborough, Ind. Combined lock and latch .....	Sept. 6, 1870
109,083	Wederkineh, Carl O., and Archibald Starkweather, Boston, Mass. Floating velocipede .....	Nov. 8, 1870
109,783	Wedge, Francis, assignor to self and Thomas Griffith, Zanesville, Ohio. Steam-engine .....	Nov. 29, 1870
100,697	Weed, Alfred, Boston, Mass. Self-closing auger stop-cock. (Antedated Feb. 25, 1870) .....	Mar. 8, 1870
98,823	Weed, Otis H., Boston, Mass. Washing-machine .....	Jan. 11, 1870
107,205	Weeden, Thomas, and Thomas Tribe, Hillsdale, Mich. Cloth-measuring machine .....	Sept. 6, 1870
	Weeden, William B., <i>et al.</i> (See Taft, Weeden & Taft.) (Four cases.) (Design.) .....	
107,987	Weeks, Abner B., Rockland, Me. Furnace-grate .....	Oct. 4, 1870
99,123	Weeks, William H., New York, N. Y. Automatic lighting-attachment for lamps and taper-burners .....	Jan. 25, 1870
103,110	Same.....Automatic lighting-wicks for lamps .....	May 17, 1870
108,541	Wegmann, Frederic, Italy. Machine for cleaning and separating grain .....	Oct. 18, 1870
106,973	Wegmann, Friedrich, Italy. Condenser .....	Aug. 30, 1870
99,985	Wegner, Friedrich, and Charles Schleeter, West Troy, N. Y. Churn .....	Feb. 15, 1870
106,897	Wegner, Herrman and Friedrich, West Troy, N. Y. Knife and fork cleaner .....	Aug. 30, 1870
102,995	Wehrham, Adelbert W., Columbia, S. C. Lamp for halls, gardens, &c. ....	May 10, 1870
104,517	Wehrser, Abraham H., San Francisco, Cal. Child's chair .....	June 21, 1870
	Weible, Jacob R. (See Gammel, William F., assignor.) .....	
108,861	Weichert, Arnold, New York, N. Y. Manufacture of sugar .....	Nov. 1, 1870
102,894	Weicker, William, Blackstone, Mass. Mold for making rubber pencil-tips. ....	May 10, 1870
110,315	Weidman, Jacob, John Major, and John J. Sample, Pittsburgh, Pa. Spark-arrester .....	Dec. 20, 1870
102,630	Weigle, Charles H., York, Pa. Attaching handles to joiners' plows .....	May 3, 1870
101,196	Weiland, Godfried, Dayton, Ohio. Horse hay-rake. (Antedated Dec. 14, 1869) ..	Mar. 22, 1870
	Weimar, Jacob, and John Farrel. (See Farrel & Weimar.) .....	
103,692	Weimar, John S., Pleasant Hill, Ohio. Railway-rail chair .....	May 31, 1870
104,804	Weimar, Peter L., Lebanon, Pa. Tuyere .....	June 28, 1870
104,906	Weinman, George, Columbia, Ohio. Combined piston-head and valve .....	June 23, 1870
106,974	Weinman, George M., Columbus, Ohio. Pump-valve .....	Aug. 30, 1870
109,980	Same.....Steam-pump .....	Dec. 6, 1870
109,280	Weis, Wendelin, St. Paul, Minn. Machine for making cigar-bunches .....	Nov. 15, 1870
	Weisenberger, Philipp. (See Tyson, William W., assignor.) .....	
101,950	Weismantel, Valentin, Belleville, Ill. Hand corn-sheller .....	April 12, 1870
99,030	Weisner, William, assignor to self and Claudius Kiefer, Elizabethtown, New Mexico. Strike for locks .....	Jan. 18, 1870
	Weiss, Jacob. (See Splitdorf, Henry, assignor.) .....	
108,862	Weiss, Theodor, Saxony. Metallurgic and other furnace .....	Nov. 1, 1870
	Weissinger, Rozel. (See Meaders, Galen, assignor.) .....	
108,418	Welbourn, Edward L., Union City, Ind. Horse-collar fastening .....	Oct. 18, 1870
	Welch, Benjamin G. (See Hamlin, Mahlon, assignor) .....	
	Welch, E. B. (See Adams, Milton F., assignor.) .....	
	Same.....(See Anders, George L., assignor.) .....	
104,673	Welch, Hilyard, assignor to Amos M. Salisbury, Schuylerville, N. Y. Street-car starter .....	June 21, 1870
	Welch, James H. (See Atkinson, Mahlon B., assignor.) .....	
	Welch, James M. (See King, Sidney D., assignor.) .....	
109,854	Welch, Peter, St. Louis, Mo. Machine for trussing barrels .....	Dec. 6, 1870
99,379	Welch, Samuel, Belpassi, Oreg. Gang-plow .....	Feb. 1, 1870
	Welch, Spring & Co. (See Lewis, Benjamin B., assignor.) .....	
99,986	Welch, William, England. Apparatus for diffusing vapors through cushions, mattresses, &c. ....	Feb. 15, 1870
106,296	Welch, William H., Bloomington, Ill. Washing-machine .....	Aug. 9, 1870
108,073	Weld, Edwin C., assignor to self and Theodore C. Glazier, New York, N. Y. Letter-box .....	Oct. 4, 1870
	Weld, Stephen M. (See Waite, Enoch, assignor.) .....	
98,727	Welling, William M., New York, N. Y. Composition resembling horn .....	Jan. 11, 1870
108,660	Same.....Die for molding buttons .....	Oct. 25, 1870
99,040	Wellington, A. H., Woodstock, Vt. Summer cooking-stove .....	Jan. 18, 1870
102,341	Wellington, Darius, Boston, Mass. Faucet .....	April 26, 1870
102,737	Same.....Lavatory apparatus .....	May 3, 1870
102,738	Same.....Water-closet bowl .....	May 3, 1870
98,824	Wellington, Henry, assignor to self and Truman P. Doane, Chicago, Ill. Vapor-burner .....	Jan. 11, 1870
100,572	Same.....Vapor-burner .....	Mar. 8, 1870
107,741	Same.....same .....	Sept. 27, 1870
100,345	Wellington, William, Rockford, Ill. Clothes-pin .....	Mar. 1, 1870
100,346	Same.....Apparatus for transmitting motion to sewing-machines. ....	Mar. 1, 1870
102,996	Wellington, Winslow, assignor to Benjamin Wellington, Hillsborough, N. H. Head-block for saw-mills .....	May 10, 1870
99,041	Wellman, Marshall D., Allegheny City, Pa. Stove-grate .....	Jan. 18, 1870
101,795	Same.....Allegheny County, Pa. Grate-bar for steam-generators .....	April 12, 1870
100,826	Wells, Albert S., New Britain, Conn. Ladle for pouring metals .....	Mar. 15, 1870
101,397	Wells, Charles G., Collinsville, Conn. Sawing-machine .....	Mar. 29, 1870
108,542	Wells, Charles S., Springfield, Mass. Manufacture of boxes, cartridge-cases, &c. ....	Oct. 18, 1870
100,956	Wells, Edward, New Haven, Conn. Landau-carriage door .....	Mar. 15, 1870
103,948	Same.....Concealed hinge for landau-carriages .....	June 7, 1870
109,981	Same.....Landauet-carriage .....	Dec. 6, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
4,322	Wells, Edward, assignor to Wells, Crittenden & Co., New Haven, Conn. Carriage-boot ..... (Design) .....	Aug. 30, 1870
103,111	Wells, George A., Oskaloosa, Iowa. Box for transporting eggs.....	May 17, 1870
99,799	Wells, George W., Lawton, Mich. Scaffold .....	Feb. 15, 1870
104,235	Wells, Glory Ann, Luzerne, N. Y. Dish-washer .....	June 14, 1870
103,400	Wells, Horace, Hopkinton, R. I. Shuttle for looms.....	May 24, 1870
	Wells, John H., <i>et al.</i> (See Bailey, John A., assignor.) .....	
110,613	Wells, Marcus M., Hartwick, N. Y. Grain-rake .....	Dec. 27, 1870
99,612	Wells, Richard P., assignor to self and John P. Comly, Dayton, Ohio. Churn ..	Feb. 8, 1870
100,698	Wells, William, Salem, Mass. Spring bed-bottom.....	Mar. 8, 1870
106,297	Same..... Car-seat .....	Aug. 9, 1870
106,298	Wells, William, assignor to self, E. B. Horton, and David Buffum, Salem, Mass. Box or case for hot-beds .....	Aug. 9, 1870
109,855	Wells, William, assignor to self and John Wriglesworth, Cleveland, Ohio. Spring-hinge.....	Dec. 6, 1870
106,752	Wells, William W., Webster, Iowa. Shuttle for sewing-machines.....	Aug. 23, 1870
	Welsh, Charles, <i>et al.</i> (See Wolff, Ludwig, assignor.) .....	
106,436	Welsh, Dwight F., Bucyrus, Ohio. Corn-husker .....	Aug. 16, 1870
109,162	Same..... Nevada, Ohio. Apparatus for grinding the knives of mowing-machines.....	Nov. 8, 1870
	Welton, Fred. A., <i>et al.</i> (See Armington, William W., assignor.) .....	
99,380	Welty, Mary W., New York, N. Y. Shield for sewing-machines.....	Feb. 1, 1870
109,281	Wemple, Leonard C., Rockford, Ill. Door-stop.....	Nov. 15, 1870
108,220	Wemyss, Alexander, Philadelphia, Pa. Cooking-stove.....	Oct. 11, 1870
98,825	Wendell, Isaac P., assignor to self and Stephen P. M. Tasker, Philadelphia, Pa. Journal-bearing .....	Jan. 11, 1870
101,551	Same..... Lubricating journals and bearings .....	April 5, 1870
104,805	Same..... Lubricating journal-bearings .....	June 28, 1870
102,739	Wendell, Isaac P., and Stephen P. M. Tasker, Philadelphia, Pa. Lubricator for loose pulleys .....	May 3, 1870
	Wendell, Jules, and Ernst W. Gilles. (See Gilles & Wendell.) .....	
107,574	Wendell, Washington, Milwaukee, Wis. Card-rack. (Antedated Sept. 17, 1870) ..	Sept. 20, 1870
103,949	Wendell, Washington, assignor to the Finkle & Lyon Manufacturing Company, Milwaukee, Wis. Thread-controller for sewing-machines.....	June 7, 1870
98,826	Wendt, Hermann, assignor to Henry Scymour & Co., Elizabeth, N. J. Pruning-shears .....	Jan. 11, 1870
103,693	Same..... Process of welding and tempering shear-blades .....	May 31, 1870
3,985	Wendt, John R., New York, N. Y. Handle for spoons, forks, ladles, &c. (Design) ..	April 19, 1870
106,753	Wenger, Milton, Upper Leacock, Pa. Combined fork and band-cutter .....	Aug. 23, 1870
99,987	Went, Robert, Brooklyn, N. Y. Combination-toy .....	Feb. 15, 1870
	Wentworth, Harry, and William O'Brien. (See O'Brien & Wentworth.) ..	
4,356	Wentworth, Isaac B., New York, N. Y. Hat .....	Sept. 13, 1870
	Wentworth, James H., and Joseph Pratt. (See Pratt & Wentworth.) ..	
	Wentworth, Louis E., and George W. White. (See White & Wentworth.) ..	
107,314	Wentworth, William P., Seneca Falls, N. Y. Snow-shovel .....	Sept. 13, 1870
109,564	Werckmeister, Albert, Prussia. Liquid-meter .....	Nov. 22, 1870
104,086	Wernershirchen, Hubert, Chicago, Ill. Bridge-gate.....	June 7, 1870
106,975	Werner, August, Buffalo, N. Y. Straw and feed cutter.....	Aug. 30, 1870
109,694	Werner, Christopher, Charleston, S. C. Awning-frame.....	Nov. 29, 1870
98,827	Werner, David, St. Louis, Mo. Hinge .....	Jan. 11, 1870
99,124	Werner, John, Mannheim, Baden. Composition for lining ale and beer casks ..	Jan. 25, 1870
4,500	Werner, Robert, Hoboken, N. J. Dress-trimming .....	Nov. 29, 1870
104,087	Werner, William H., Nazareth, Pa. Cane-gun .....	June 7, 1870
100,699	Wernet, August, and John Kershaw, Canton, Ohio. Construction of stove-plates .....	Mar. 8, 1870
99,267	Werni, Peleg, assignor to self and James W. Morrison, Chicago, Ill. Roofing-material .....	Jan. 25, 1870
109,784	Werntz, George W., Auburn, Ind. Water-wheel.....	Nov. 29, 1870
100,475	Werkmeister, A., assignor to self and Henry Loewenberg, Prussia. Liquid measuring and registering device.....	Mar. 1, 1870
110,095	Werst, Decatur, assignor to self and Joshua Lafflin, South Bend, Ind. Double-tree fastener.....	Dec. 13, 1870
102,631	Werts, Nicholas, Magnolia, Ill. Cultivator.....	May 3, 1870
99,268	Werts, William, Chicago, Ill. Machine for shrinking tires.....	Jan. 25, 1870
110,316	Wesner, Samuel F., assignor to self and James Foster, jr., Camden, N. J. Adjustable square .....	Dec. 20, 1870
4,256	Wessel, Frederick, New Britain, Conn. Bracelet..... (Design) ..	July 19, 1870
	Wesson, Daniel B. (See King, Charles A., assignor) .....	
103,694	Wesson, Frank, Worcester, Mass. Breech-loading fire-arm.....	May 31, 1870
	West, Bradley & Cacy Manufacturing Company, <i>et al.</i> (See Pratt, Charles E., assignor.) .....	
106,640	West, Isaiah M., Wilmington, Ohio. Fence.....	Aug. 23, 1870
109,476	West, John, Bethlehem, Pa. Valve.....	Nov. 22, 1870
108,419	West, John W., Saylorville, Iowa. Wagon. (Antedated Oct. 8, 1870).....	Oct. 18, 1870
99,269	West, Jonathan B., Geneseo, N. Y. Lathe-dog .....	Jan. 25, 1870
101,330	Same..... Device for tightening carriage-tires.....	Mar. 29, 1870
99,381	West, J. D., New York, N. Y. Lightning-rod .....	Feb. 1, 1870
106,898	West, Lewis, Georgetown, Ky. Corn-planter.....	Aug. 30, 1870
4,492	West, Samuel, Boston, Mass. Church-window glass..... (Design) ..	Nov. 22, 1870
100,573	West, Thomas J., assignor to self, John L. Russell, Abram C. Fisher, and Joel Morekess, Alfred Centre, N. Y. Fertilizer-sower.....	Mar. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,522	Westbrook, Richard B., <i>et al.</i> (See Manson, George W., assignor.) Westcott, Charles S., assignor to self, John Austin, Rollin Germain, and William H. H. Williams, Elizabeth, N. J. Printers' inking-roller. (Antedated Dec. 17, 1870).	Dec. 27, 1870
104,236	Westcott, C. S., and A. K. Rider. Type-distributing machine.	June 14, 1870
107,139	Westcott, Henry P., Seneca Falls, N. Y. Butter-pail.	Sept. 6, 1870
106,299	Westcott, Henry P., and Sherrod S. Little. (See Little & Westcott.) Westcott, Samuel B., River Point, R. I. Stopping-mechanism for spinning and other machines.	Aug. 9, 1870
103,401	Westerman, James, Sharon, Pa. Furnace for boiling and puddling iron.	May 24, 1870
104,518	Westfall, Daniel B., Lyons, N. Y. Potato-digger.	June 21, 1870
99,382	Westfall, Ezra B., assignor to self and Frank Thomson, Williamsport, Pa. Railroad signal-box.	Feb. 1, 1870
	West Haven Buckle Company. (See Hartshorn, Sheldon S., assignor). (Reissue.) Same..... (See Hyde, James C., assignor.)	
106,899	Westinghouse, George, jr., Pittsburgh, Pa. Steam engine and pump.	Aug. 30, 1870
109,695	Same..... Atmospheric car-brake pipe.	Nov. 29, 1870
101,066	Westlake, William, Chicago, Ill. Attachment for lamp-burners.	Mar. 22, 1870
102,895	Same..... Lantern.	May 10, 1870
102,896	Same..... same.	May 10, 1870
107,140	Same..... same.	Sept. 6, 1870
107,141	Same..... Oil-can.	Sept. 6, 1870
108,221	Same..... Lantern.	Oct. 11, 1870
103,222	Same..... same.	Oct. 11, 1870
108,661	Westman, Henry M., East Boston, Mass. Cement for coating and protecting wood.	Oct. 25, 1870
109,361	Westmoreland, Joseph M., Danville, Texas. Grinding-mill.	Nov. 15, 1870
103,262	Weston, Charles H., and John Dennis, Lowell, Mass. Cloth-press.	May 17, 1870
103,263	Same..... same.	May 17, 1870
109,565	Weston, Charles T., Scranton, Pa. Mill-bush and other spindle.	Nov. 22, 1870
104,384	Weston, Charles T., Sidney Broadbent, and Willard B. Culver, Scranton, Pa. Grist-mill.	June 14, 1870
105,393	Weston, Elijah, Buffalo, N. Y. Stove-door.	July 12, 1870
101,197	Weston, Henry J., Buffalo, N. Y. Leather-rolling machine.	Mar. 22, 1870
	Weston, Horace S. (See Lucas, Robert A., assignor.)	
103,803	Weston, Irving E., and Alvin Streeter, Winchendon, Mass. Churn.	May 31, 1870
101,686	Weston, James W., New York, N. Y. Car-wheel.	April 5, 1870
110,096	Same..... Barrel.	Dec. 13, 1870
107,840	Weston, William, William R., and Nathaniel, and Burt Brett, Stevens Point, Wis. Steam-generator.	Sept. 27, 1870
101,687	Westover, Charles W., assignor to self and E. J. Carter, St. Joseph, Mo. Composition for paint, cement, &c.	April 5, 1870
102,343	Wetherby, James S., New York, N. Y. Lamp-burner.	April 26, 1870
	Wetherell, Charles H. (See Gowen, James E., assignor.)	
110,097	Wetmore, Fannie, Chicago, Ill. Pattern for measuring and laying out garments.	Dec. 13, 1870
108,309	Wetmore, Hiram P., Elizabeth, N. J., and John G. Hitchcock, New York, N. Y. Neck-tie.	Oct. 11, 1870
104,519	Wetmore, Seth, Wellsborough, Pa. Mortar-mixer.	June 21, 1870
100,574	Wettengel, Charles W., Pittsburgh, Pa. Machine for making horseshoes.	Mar. 8, 1870
102,632	Weyand, John M., St. Louis, Mo. Apparatus for distilling.	May 3, 1870
100,476	Weymouth, George F., Dresden, Maine. Horse hay-fork. (Antedated Feb. 26, 1870).	Mar. 1, 1870
107,142	Whaite, Charles L., Waverly, Pa. Cultivator.	Sept. 6, 1870
105,748	Whalen, Frank, Balston Spa, N. Y. Stove-leg.	July 26, 1870
105,531	Wharton, George, Jerseyville, Ill. Plow.	July 19, 1870
	Wharton, John, <i>et al.</i> (See Nutt, Isaiah, assignor.)	
106,900	Wharton, Levi, Salem, Ohio. Clamp.	Aug. 30, 1870
99,383	Wharton, Linton, Richland, Iowa. Washing-machine.	Feb. 1, 1870
101,951	Wharton, William, jr., Philadelphia, Pa. Railway-switch.	April 12, 1870
110,317	Wharton, William T. H., Fayetteville, Tenn. Leach for tanning.	Dec. 20, 1870
103,662	Wheat, Corydon, Geneva, N. Y. Skate.	Oct. 25, 1870
107,575	Wheat, George W., Phillipsburgh, Pa. Sash-holder.	Sept. 20, 1870
107,988	Same..... Railway-car coupling.	Oct. 4, 1870
	Wheat, James E., and Chauncey Perry. (See Perry & Wheat.)	
103,074	Wheat, John J., Wheeling, W. Va. Sewing-machine table.	Oct. 4, 1870
100,957	Wheatley, Robert J., Du Quoin, Ill. Plow.	Mar. 15, 1870
	Wheaton, Abraham C., <i>et al.</i> (See Nutt, Isaiah, assignor.)	
	Wheaton, Abram C. (See Mandeville, George A., assignor.)	
	Wheeler & Wilson Manufacturing Company. (See Moschcowitz, Schamu Moritz, assignor.) Same..... (See Snyder, William B., assignor.)	
109,982	Wheeler, Aaron O., St. Augustine Depot, Ill. Mode of setting tires on wheels.	Dec. 6, 1870
	Wheeler, Albert G., <i>et al.</i> (See Dougherty, John B., assignor.)	
101,796	Wheeler, Asa, assignor to George B. Wheeler, Brattleborough, Vt. Countersink.	April 12, 1870
105,282	Wheeler, Benjamin F., Calais, Vt. Bridle-bit.	July 12, 1870
99,270	Wheeler, C. G., Chicago, Ill. Fire-extinguisher.	Jan. 25, 1870
109,362	Wheeler, Edmund H., Scranton, Pa. Sash-holder. (Antedated Nov. 5, 1870).	Nov. 15, 1870
104,237	Wheeler, Elbridge, Hudson, Mass. Combined iron and steel bar.	June 14, 1870
104,238	Same..... Manufacture of rails for railroads.	June 14, 1870
	Wheeler, Elisha P., <i>et al.</i> (See Tuttle, Joseph H., assignor). (Reissue.)	
102,343	Wheeler, Emory T., assignor to self and William H. Vaughan, Cannelton, Ind. Shingle-machine.	April 26, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
109,477	Wheeler, George T., Mexico, N. Y. Bee-hive .....	Nov. 22, 1870
99,938	Wheeler, H. M., Woodbine, Iowa. Wind-mill .....	Feb. 15, 1870
107,576	Wheeler, Isaac H., Sciotoville, Ohio. Bridge .....	Sept. 20, 1870
108,946	Wheeler, Lorenzo D., assignor of one-third interest to Hubbard H. Beigham, Fitchburgh, Mass. Fan-blower .....	Nov. 1, 1870
102,633	Wheeler, Norman W., Brooklyn, N. Y., and Walton W. Evans, New Rochelle, N. Y. Evaporating and distilling by solar heat .....	May 3, 1870
104,239	Wheeler, Orson Harvey, Hamline, Mich. Carriage-spring guard .....	June 14, 1870
	Wheeler, Ralph, <i>et al.</i> (See Harrington, Jackson, assignor.) .....	
	Wheeler, Russell B., <i>et al.</i> (See Wolcott, Henry E., assignor.)....(Two cases.) .....	
104,240	Wheeler, Seth, Albany, N. Y. Horse-power .....	June 14, 1870
108,223	Wheeler, Shepherd H., Dowagiac, Mich. Nut-lock .....	Oct. 11, 1870
107,428	Wheeler, Sylvester P., Bridgeport, Conn. Coating embossed wood. (Ante-dated Sept. 5, 1870) .....	Sept. 13, 1870
101,552	Wheeler, Sylvester P., assignor to self and Samuel B. Henry, Bridgeport, Conn. Manufacture of articles of compressed wood .....	April 5, 1870
101,553	Same..... Process of treating wood .....	April 5, 1870
105,018	Wheeler, Thomas N., Blue Earth City, Minn. Animal-tether .....	July 5, 1870
105,019	Wheeler, Thomas W., assignor to self and E. W. Carpenter, New Berne, N. C. Distilling pine-wood .....	July 5, 1870
98,828	Wheeler, Willard M., Berlin, Mass. Water-wheel .....	Jan. 11, 1870
100,225	Wheeler, William A., New York, N. Y. Canceling-stamp .....	Feb. 22, 1870
99,959	Wheelock, Alpheus, Fort Wayne, Ind. Metallic abutment for bridges .....	Feb. 15, 1870
99,990	Wheelock, Jerome, Worcester, Mass. Steam-piston packing .....	Feb. 15, 1870
108,310	Same..... Boring-apparatus .....	Oct. 11, 1870
4,121	Wheelock, Jesse, Lancaster, N. Y. Boat for transporting railroad-cars. (Re-issue) .....	Sept. 13, 1870
	Whelan, Alexander, and G. F. Fischer. (See Fischer & Wheeler.) .....	
	Whelpley, Corydon E., and Charles E. Macomber. (See Macomber & Whelpley.) .....	
104,910	Whelpley, James D., Boston, Mass. Breaking-machine .....	June 28, 1870
3,857	Whelpley, James D., and Jacob J. Storer, assignors to Thomas William Clarke and William S. Dexter, trustees, Boston, Mass. Use and application of fuel in metallurgic and other furnaces .....	Mar. 1, 1870
101,067	Whelpley, James D., and Jacob J. Storer, Boston, Mass. Manufacture of iron, and in the apparatus therefor .....	Mar. 22, 1870
102,740	Same..... Manufacture of wrought iron from ore, cinder, or slag .....	May 3, 1870
102,997	Same..... Feed-apparatus for grinding-mills, &c .....	May 10, 1870
103,695	Same..... Feeding fuel to metallurgic and other furnaces .....	May 31, 1870
103,804	Same..... Feeding pulverized fuel to metallurgic and other furnaces .....	May 31, 1870
109,755	Same..... Heating metallurgic and other furnaces .....	Nov. 29, 1870
	Same..... (See Storer & Whelpley) .....	(Disclaimer)
	Whidden, J. N. (See Crawford, Peter S., assignor.) .....	
	Whidden, J. W. (See Golladay, Jacob H., assignor.) .....	
	White, Joseph, and William Davis. (See Davis & White.) .....	
	Whiley, Thomas B. (See Wolford, John B., assignor.) .....	
102,634	Whipple, James T., Chicago, Ill. Pump .....	May 3, 1870
107,841	Same..... Pump-valve .....	Sept. 27, 1870
104,520	Whipple, Nelson S., Detroit, Mich. Glue or cement .....	June 21, 1870
	Whipple, Rodney M., and Thomas S. Dickerson. (See Dickerson & Whipple.) .....	
	Whitaker, George W. (See Hartman, John M., assignor.) .....	
	Whitaker, Nathaniel N., and Lewis E. Lockling. (See Lockling & Whitaker.) .....	
102,741	Whitaker, Samuel, Bel Air, Md. Automatic gate .....	May 3, 1870
100,827	Whitbeck, George, Phelps, N. Y. Horse-poke .....	Mar. 15, 1870
	Whitcomb, Austin O., <i>et al.</i> (See Stuart, William M., assignor.) .....	
105,749	Whitcomb, Elisha, and Daniel A. Gunn, Waterville, Ohio. Land-roller .....	July 26, 1870
110,523	Whitcomb, Elisha, Waterville, Ohio. Roller-lifting power .....	Dec. 27, 1870
103,805	Whitcomb, Franklin, Chicago, Ill. Brick-machine .....	May 31, 1870
	Whitcomb, George Albert, and Richard Robley Ramsdell. (See Ramsdell & Whitcomb.) .....	
100,226	White, Abner, Macon, Ga. Hook for harness .....	Feb. 22, 1870
101,688	White, Alexander, Geneseo, Ill. Base-burning stove .....	April 5, 1870
104,911	Same..... Window for coal-stoves .....	June 28, 1870
99,613	White, Alexander, assignor to self, Alexander H. Hammond, and Isaac D. Rugles, Geneseo, Ill. Cooking-stove .....	Feb. 8, 1870
	White, Amos, and Samuel P. Emerson. (See Cole, J. H., assignor.) .....	
107,643	White, Charles H., Emmett Township, Mich. Railway .....	Sept. 20, 1870
99,614	White, Eugene A., Boston, Mass. Current-wheel .....	Feb. 8, 1870
100,828	White, F. C., Euclid, Ohio. Lifting-jack .....	Mar. 15, 1870
103,663	White, George H., New York, N. Y. Tubular bridge .....	Oct. 25, 1870
109,983	Same..... Huntington, N. Y. Fruit-basket. (Antedated Nov. 26, 1870) .....	Dec. 6, 1870
102,742	White, George W., Malden, Mass., and Louis C. Wentworth, Melrose, Mass. Drier .....	May 3, 1870
106,437	White, Harrison W., Joppa Village, Mass. Vine cutter and trimmer .....	Aug. 16, 1870
105,532	White, Henry J., Chatham, Iowa. Water-wheel .....	July 19, 1870
102,897	White, Hiram J., Boston, Mass. Lamp-burner .....	May 10, 1870
109,856	Same..... Lantern .....	Dec. 6, 1870
102,455	White, James E., New York, N. Y. Combined filter and cooler .....	April 26, 1870
109,786	Same..... Casting stench-traps .....	Nov. 29, 1870
	White, James H. (See Sieben, George, assignor) .....	(Design.)
	White, James M. (See McDonald, Alvin, assignor.) .....	
	White, James M., and Alvin McDonald. (See McDonald & White.) .....	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
108,740	White, John Albert, Philadelphia, Pa. Handle of table-knives.....	Oct. 25, 1870
106,901	White, John C., Auburn, N. Y. Heel-rounding machine.....	Aug. 30, 1870
104,088	White, John E., Clinton, Ill. Seed-planter.....	June 7, 1870
100,091	White, John G., Albany, N. Y. Malt-kiln. (Antedated Feb. 17, 1870).....	Feb. 22, 1870
104,089	White, John G., Cambridge, Mass. Earth-urinal.....	June 7, 1870
106,753	White, Joseph, assignor to self and J. B. Wickersham, Philadelphia, Pa. Vapor-burner.....	Aug. 23, 1870
	White, L. E. (See Graessle, Gottlieb, assignor.)	
101,952	White, Leroy S., Plantsville, Conn. Die for forming carriage-shackles.....	April 12, 1870
104,385	White, Margaret, Saratoga Springs, N. Y. Ironing-table and bureau.....	June 14, 1870
110,410	Same..... Ironing-table bureau.....	Dec. 20, 1870
109,696	White, Maurice W., assignor to self and Ebenezer P. Cutter, Boston, Mass. Violin.....	Nov. 29, 1870
104,521	White, Nathaniel F., Mount Pleasant, Iowa. Bee-hive.....	June 21, 1870
99,800	White, Peregrine, Dixmont Centre, Me. Lubricator for bearings of shafts. (Antedated Feb. 11, 1870).....	Feb. 15, 1870
109,566	White, Philo S., Providence, R. I. Paper cap.....	Nov. 22, 1870
105,614	White, Robert, assignor to self and Joseph J. Walton, Rockville Centre, N. Y. Clamp-nut for screws.....	July 19, 1870
99,505	White, Rollin, Lowell, Mass. Revolving fire-arm.....	Feb. 1, 1870
3,833	Same..... Metallic cartridge..... (Reissue).....	Feb. 8, 1870
100,227	Same..... Revolver.....	Feb. 22, 1870
	White, Thomas G., et al. (See Leak, James, assignor) (Two cases.) (Design.)	
108,863	White, Windsor N., Winchendon, Mass. Heating-apparatus for lamps.....	Nov. 1, 1870
101,331	White, Zebard Thompson, assignor to self and Franklin Waldo Perry, Winchester, Mass. Apparatus for tanning hides.....	Mar. 29, 1870
100,092	Whiteford, John, Pond City, Kans. Car-coupling.....	Feb. 22, 1870
104,674	Whitehead, Edward, Cincinnati, Ohio. Skipping-hoop.....	June 21, 1870
99,125	Whitehead, John P., Chicago, Ill. Railroad-ticket. (Antedated Jan. 16, 1870).....	Jan. 25, 1870
103,264	Whitehead, Lewis, Nunda, N. Y. Harness.....	May 17, 1870
104,806	Same..... same.....	June 23, 1870
110,318	Whitehead, William Edward, England. Feeding-mechanism for cotton-openers, &c.....	Dec. 20, 1870
110,524	Whitehill, Robert, assignor to the Positive-Motion Loom Company, New York, N. Y. Loom.....	Dec. 27, 1870
110,319	Whitehouse, A. S., assignor to self and Edward W. Southworth, Ashland, Mass. Pump-box.....	Dec. 20, 1870
3,920	Whitehouse, Henry, Newark, N. J. Set of turret and rings for harness-saddles. (Design).....	Mar. 22, 1870
99,384	Whitehurst, William E., Norfolk, Va. Fire-place grate. (Antedated Jan. 20, 1870).....	Feb. 1, 1870
	Whiteley, David, Providence, R. I. Process of separating the hair from the warp in hair-cloth.....	Dec. 6, 1870
	Whiteley, Edward, Cambridge, Mass. Culinary boiler..... (Extension).....	April 4, 1870
99,506	Whiteley, William N., Springfield, Ohio. Rake for harvesters.....	Feb. 1, 1870
104,386	Same..... Harvester.....	June 14, 1870
105,394	Same..... same.....	July 12, 1870
105,385	Same..... same.....	July 12, 1870
105,396	Same..... Harvester-dropper.....	July 12, 1870
	Same..... Harvesting-machine..... (Disclaimer filed).....	Nov. 25, 1870
	Same..... same..... (Extension).....	Nov. 25, 1870
	Same..... same..... (Extension).....	Nov. 25, 1870
102,635	Whiteley, William N., and Salem T. Lamb. (See Lamb & Whiteley.)	
98,829	Whiteman, John W., Christiana, Del. Safety-socket for whips, umbrellas, billiard-cues, &c.....	May 3, 1870
	Whiteside, John, Salinas, Cal. Platform-attachment for grain-separators.....	Jan. 11, 1870
	Whithed, Darius, et al. (See Bradshaw, Brown & Whithed.)	
103,806	Whiting, David, Ashland, Ohio. Clover-machine.....	May 31, 1870
	Whiting, George Augustus. (See Howard, Elijah Leavitt, assignor.)	
101,332	Whiting, John L., Boston, Mass. Brush.....	Mar. 29, 1870
106,902	Same..... same.....	Aug. 30, 1870
107,742	Same..... same.....	Sept. 27, 1870
108,420	Same..... Paint-brush.....	Oct. 18, 1870
109,084	Same..... Brush.....	Nov. 8, 1870
100,093	Whiting, Lewis F., and Franklin Smith, Boston, Mass. Safe.....	Feb. 22, 1870
107,842	Whiting, William H., assignor to self and Marcus M. Johnson, Wellington, Conn. Carding-machine teeth.....	Sept. 27, 1870
106,903	Whitker, Daniel D., assignor of one-half interest to James McGhee, New York, N. Y. Harvester.....	Aug. 30, 1870
105,283	Whitley, Exum, assignor to self and Charles H. Foster, Murfreesborough, N. C. Manufacture of fertilizers.....	July 12, 1870
106,438	Whitlock, Abel, Danbury, Conn. Saw-jack.....	Aug. 16, 1870
108,741	Whitlock, Cyrus, deceased, by John T. Whitlock, administrator, Bridgeport, Vt. Horse-hoe.....	Oct. 25, 1870
105,397	Whitlock, Daniel, Newark, N. J. Feed-water heater for steam-boilers.....	July 12, 1870
	Whitlow, Samuel R. (See Stewart, James T., assignor.)	
102,998	Whitman, Charles P., Charlemont, Mass. Wheel-hub.....	May 10, 1870
106,754	Same..... Bit-stock.....	Aug. 23, 1870
	Whitman, Josiah A. (See Servant, William, assignor.)	
99,991	Whitman, Silas, Londonderry, Vt. Cam-lever.....	Feb. 15, 1870
98,652	Whitmarsh, Samuel, Northampton, Mass. Composition for flooring, wainscotting, and other purposes.....	Jan. 4, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,689	Whitmore, Andrew E., Somerville, Mass. Sliding calipers.....	April 5, 1870
105,153	Same..... Boston, Mass. Calipers .....	July 5, 1870
105,615	Whitmore, Franklin, and Edward Conklin, Channahon, Ill. Weather-strip for doors.....	July 19, 1870
104,912	Whitmore, Nathaniel Gilbert, assignor to self and Alfred A. Reed, jr., Mansfield, Mass. Cartridge.....	June 23, 1870
106,755	Whitmore, Seth H., assignor to Caleb C. Burroughs and James Milliken, Decatur, Ill. Shaft-coupling.....	Aug. 23, 1870
106,756	Same..... same.....	Aug. 23, 1870
100,477	Whitmore, William D., Bloomington, Ill. Piston-packing .....	Mar. 1, 1870
	Whitmore, William D., and Horace C. Smith. (See Smith & Whitmore.)	
101,068	Whitney, Aaron W., Pardon A., and Foster A., Woodstock, Vt. Tinnors' and sheet-iron workers' rolls .....	Mar. 22, 1870
109,984	Whitney, Andrew Jackson, Harrisburgh, Pa. Canal waste-way and sluice-gate ..	Dec. 6, 1870
103,532	Whitney, Baxter D., Winchendon, Mass. Machine for bottoming fruit-baskets.	May 24, 1870
103,533	Same..... Cutter for cutting the bodies of fruit-baskets.....	May 24, 1870
	Same..... (See Atwood & Ripley, assignors.)	
103,265	Whitney, Edwin F., and Reuben Jones, Union Mills, Pa. Boring-tool.....	May 17, 1870
109,085	Whitney, Frank W., Brooklyn, N. Y. Paper-file.....	Nov. 8, 1870
103,402	Whitney, George F., assignor to self and Herbert S. Merrill, Boston, Mass. Compound for oiling, polishing, and blacking leather.....	May 24, 1870
4,021	Whitney, Henry, East Cambridge, Mass. Lamp-fount..... (Design) ..	May 10, 1870
4,022	Same..... Candlestick..... (Design) ..	May 10, 1870
4,292	Same..... Inkstand..... (Design) ..	Aug. 9, 1870
	Whitney, Henry I. and Albert A. (See Chandler, George W., assignor.)	
	Whitney, Hiram, and Benjamin S. Goodwin. (See McGill, John, assignor.)	
102,344	Whitney, James S., Lowell, Mass. Curtain-fixture.....	April 26, 1870
4,122	Whitney, Joel, Winchester, Mass. Machine for rolling leather..... (Reissue) ..	Sept. 13, 1870
100,529	Whitney, John H., Helena, Montana Ter. Sluice-box for gold-mining. (Ante-dated March 5, 1870) .....	Mar. 15, 1870
109,163	Whitney, John H., Rochester, Minn. Mechanical movement.....	Nov. 8, 1870
109,164	Same..... Stop-motion gear-wheel.....	Nov. 8, 1870
109,985	Same..... Combined grain harvester and binder.....	Dec. 6, 1870
103,950	Whitney, Levi H., Washington, D. C. Boot and shoe.....	June 7, 1870
107,143	Same..... Screw for soles and heels of shoes.....	Sept. 6, 1870
107,644	Same..... Machine for hulling and scouring grain, rice, coffee, &c.....	Sept. 20, 1870
109,697	Same..... Washing-machine. (Antedated Nov. 19, 1870) .....	Nov. 29, 1870
110,098	Same..... Roller-shaft for wringers. (Antedated Nov. 26, 1870) .....	Dec. 13, 1870
105,154	Whitney, Nelson, Bellingham, Mass. Signal for railways .....	July 5, 1870
105,284	Whitney, Orison C., Meadville, Pa. Knee-lever for melodeon or organ swell ..	July 12, 1870
107,743	Whitney, Samuel, Newark, N. J. Gas-carbonizing attachment for street and other lights .....	Sept. 27, 1870
109,086	Whittelsey, Isaac N., Mount Vernon, Ind. Steam-gauge and safety-valve .....	Nov. 8, 1870
109,478	Whittemore, Amos, Cambridgeport, Mass. Motive mechanism of sewing-machines. (Antedated Nov. 14, 1870) .....	Nov. 22, 1870
100,478	Whittemore, A. S., Willimantic, Conn., and John E. Atwood, Mansfield, Conn. Thrashing-machine .....	Mar. 1, 1870
	Whittemore, David. (See Lambart, Richard C., assignor.)	
4,345	Whittemore, Henry, Passaic, N. J. Curtain-cornice, &c..... (Design) ..	Sept. 6, 1870
104,387	Whittemore, James M., Augusta, Maine. Breech-loading fire-arm.....	June 14, 1870
	Whittemore, Oliver A. (See Treadway, James W., assignor.)	
	Whitten, C. T., and J. P. Crutchfield. (See Crutchfield & Whitten.)	
103,696	Whitten, John L., Essex, Vt. Glove.....	May 31, 1870
	Whittier, Charles, and Benjamin F. Campbell (See Campbell & Whittier.)	
102,421	Whittier, Hazen, West Roxbury, Mass. Thrashing-machine .....	Oct. 18, 1870
103,075	Whittingham, Harry, New York, N. Y. Sectional steam-generator.....	Oct. 4, 1870
100,830	Whittingham, Joseph, Pittsburgh, Pa. Reversible knob-latch .....	Mar. 15, 1870
102,898	Whitton, Samuel J., Coleraine, Mass. Machine-band .....	May 10, 1870
102,071	Wiard, Edward, assignor to B. F. Avery, Louisville, Ky. Handle-seat for plows.	April 19, 1870
100,479	Wiard, Norman, assignor to self and Henri L. Stuart, New York, N. Y. Safety-attachment for boilers .....	Mar. 1, 1870
100,347	Wicke, Frederick, Julius Bröner, Theodor Petersen, and Johann G. Zehfuss, Prussia. Fertilizer from excrements .....	Mar. 1, 1870
106,757	Wicker, Henry W., Norwich, Conn. Weather-strip.....	Aug. 23, 1870
100,575	Wickers, George O., Lawrence, Mass., and T. J. McClary, North Andover, Mass. Loom-cam .....	Mar. 8, 1870
105,750	Wickersham, John B., Philadelphia, Pa. Lubricator. (Antedated July 11, 1870) ..	July 26, 1870
	Same..... (See White, Joseph, assignor.)	
	Wickersham, Joshua G. (See Moore, Thomas C., assignor.)	
106,009	Wickersham, William, Boston, Mass. Hair-pin.....	Aug. 2, 1870
103,010	Same..... Means of attaching the soles to boots and shoes.....	Aug. 2, 1870
106,011	Same..... Wire-driving machine for manufacturing boots and shoes .....	Aug. 2, 1870
106,012	Same..... Manufacture of boots and shoes .....	Aug. 2, 1870
106,013	Same..... Boots and shoes .....	Aug. 2, 1870
106,241	Same..... Wire for attaching soles to boots and shoes.....	Aug. 9, 1870
103,870	Wickham, Horace, jr., Chicago, Ill. Machine for motive power.....	July 26, 1870
103,224	Wickham, James E., Hartford, Conn. Toy-locomotive .....	Oct. 11, 1870
	Wickham, Warren S., and Demon R. Gould. (See Gould & Wickham.)	
109,787	Wicks, Frank, Decatur, Ill. Elevator .....	Nov. 29, 1870
3,536	Wicks, Loren J., assignor to self, Charles N. and John A. Selser, George W. Turner, and John H. Poole, Bridgeton, N. J. Bottle..... (Design) ..	Feb. 1, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
105,398	Wicks, William A., Baltimore, Md. Machine for seaming sheet-metal cans....	July 12, 1870
107,744	Same.....Fastening for neck-ties .....	Sept. 27, 1870
110,178	Same.....Neck-tie supporter.....	Dec. 13, 1870
106,014	Widdowson, William, Rochester, N. Y. Stave-jointing machine.....	Aug. 2, 1870
107,843	Wiedersum, Philip H., New York, N. Y. Harness-saddle tree.....	Sept. 27, 1870
104,522	Wiegand, S. Lloyd, Philadelphia, Pa. Steam-generator.....	June 21, 1870
105,155	Wichl, Daniel, <i>et al.</i> (See Reinshagen, Peter W., assignor.)	
	Wichl, Daniel, assignor to self, Peter W. Rienshagan, Andrew P. Lusk, and John H. Buckman, Cincinnati, Ohio. Low-water indicator.....	July 5, 1870
99,734	Wieland, Benjamin, Oneco, Ill., and Daniel S. Young, Monroe, Wis. Water-elevator.....	Feb. 8, 1870
102,999	Wier, Stephen M., New Haven, Conn. Goose-neck for hanging carriage-springs.	May 10, 1870
	Wierman, I. W. G. (See Gibson, Samuel, assignor.)	
110,099	Wiesenhofer, Franz, Fremont, Ohio. Faucet.....	Dec. 13, 1870
	Wigg, Rollins & Co. (See Rollins, Samuel G., assignor.)	
3,921	Wiggenhorn, Joseph B., St. Louis, Mo. Cooking-stove..... (Design)...	Mar. 22, 1870
104,075	Wiggin, George B., assignor through mesne assignments to John W. Hoard, South New Market, N. H. Water-meter.....	June 21, 1870
	Wiggins, G. W. (See Rowland & Tipton, assignors.)	
103,951	Wiggins, William J., and Charles S. Stont, St. Louis, Mo. Fire-kindling fagot	June 7, 1870
108,064	Wigner, George William, England. Utilizing sewage.....	Oct. 25, 1870
104,388	Wight, Andrew Jackson, and William Lewis Meeker, Newark, N. J. Cast-iron turn-table for railways.....	June 14, 1870
101,333	Wight, Charles H., Baltimore, Md. Hand-setting calendar. (Antedated Jan. 14, 1870) .....	Mar. 29, 1870
3,962	Same.....Frame for containing stationery articles. (Antedated March 19, 1870) .....	April 5, 1870
101,933	Same.....Inkstand. (Antedated Feb. 15, 1870) .....	April 12, 1870
4,034	Same.....Stationery-furniture..... (Reissue)...	June 14, 1870
108,742	Wight, Edwin, Philadelphia, Pa. Machine for making umbrella-connections ..	Oct. 25, 1870
106,525	Wightman, Henry M., Boston, Mass. Steam water-elevator.....	Aug. 16, 1870
101,334	Wightman, Joseph C., assignor to Thomas P. Proctor, trustee, Newton, Mass. Steam water-elevator.....	Mar. 29, 1870
102,899	Wightman, Thomas, Pittsburgh, Pa. Spring-clamp for glass-blowers .....	May 10, 1870
105,751	Wikoff, Milton J., Stont's Post-Office, Ohio. Churn .....	July 26, 1870
99,385	Wilbar, George W., Taunton, Mass. Clothes-line clamp.....	Feb. 1, 1870
101,554	Wilber, John D., Poughkeepsie, N. Y. Mowing-machine .....	April 5, 1870
103,112	Wilbur, Philander, Milan, Ohio. Washing-machine .....	May 17, 1870
	Wilbur, Benjamin, and John Salisbury. (See Salisbury & Wilbur.)	
100,480	Wielke, Julius, and M. Ellenbogen, assignors to Maximilian Ellenbogen, Chicago, Ill. Bridge-gate.....	Mar. 1, 1870
98,728	Wilcox, Alanson, Green Island, N. Y. Molders' flask .....	Jan. 11, 1870
98,830	Wilcox, Alexander J., Fall River, Mass. Washing-machine.....	Jan. 11, 1870
104,076	Wilcox, Benjamin B., New Haven, Conn. Fruit-jar.....	June 21, 1870
105,285	Wilcox, Camden L., Wayne Township, Ohio. Combined cultivator and corn-drill.....	July 12, 1870
102,456	Wilcox, Charles W. and Joseph D., Kingston, R. I. Pole-socket.....	April 26, 1870
	Wilcox, Dairus. (See Dow, Joseph H., assignor.)	
	Wilcox, E. D. (See Aldrich, Robert, assignor.)	
105,752	Wilcox, Edward M., Bloomer, Wis. Miter-box .....	July 26, 1870
110,100	Wilcox, George A., Chicago, Ill. Weighing-wagon.....	Dec. 13, 1870
101,797	Wilcox, Horace C., assignor to Woods, Sherwood & Co., West Meriden, Conn. Dish-stand.....	April 12, 1870
4,247	Wilcox, H. C., assignor to the Meriden Britannia Company, West Meriden, Conn. Tea and coffee pot..... (Design)...	July 19, 1870
104,913	Wilcox, James A., assignor to self and Walter S. Wilcox, Rocky Hill, Conn. Pipe-wrench.....	June 28, 1870
	Wilcox, John H., and Philip Wisdom. (See Wisdom & Wilcox.)	
110,320	Wilcox, John W., assignor to self and John S. Schofield, Macon, Ga. Horse-power.....	Dec. 20, 1870
106,300	Wilcox, Josiah C., New London, Wis. Shearing and punching machine. (Antedated Aug. 5, 1870) .....	Aug. 9, 1870
100,576	Wilcox, Martin, Sacramento, Cal. Steam-pump device. (Antedated Dec. 30, 1869) .....	Mar. 8, 1870
106,904	Same.....Pump.....	Aug. 30, 1870
99,042	Wilcox, Stephen S., and Eli J. Colgrove, Lincklaen, N. Y. Revolving-grater. (Antedated Jan. 8, 1870) .....	Jan. 18, 1870
109,698	Wild, George L. and Louis P., Washington, D. C. Dancing-toy.....	Nov. 29, 1870
98,653	Wilde, William A., Malden, Mass. Slate-frame.....	Jan. 4, 1870
101,798	Same.....same.....	April 12, 1870
101,069	Wilder, Eli F., Lowell, Mass. Apparatus for measuring liquids. (Antedated Sept. 22, 1869) .....	Mar. 22, 1870
4,176	Same.....Drip-filtering oil-fountain..... (Reissue)...	Nov. 8, 1870
104,677	Wilder, Elijah A., Dennyville, Maine. Medicine for cure of diseases in cattle..	June 21, 1870
101,799	Wilder, Joseph W., Leominster, Mass. Stove-pipe shelf .....	April 12, 1870
103,403	Wilder, Luke A., Chicago, Ill. Roofing-compound .....	May 24, 1870
102,636	Wilder, Nahum C., Hartford, Conn. Water-cock filter .....	May 3, 1870
3,889	Wilder, Robert M., assignor of part interest to Hiram B. Robinson, Coldwater, Mich. Sheep-shears..... (Reissue)...	Mar. 22, 1870
99,735	Wilder, Salmon W., Lawrence, Mass. Cleansing paper when reduced to pulp from coloring matters .....	Feb. 8, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
110,525	Wilder, Tolbert G., Camden, Miss. Subsoil-plow.....	Dec. 27, 1870
107,144	Wildman, Frederick M., assignor to self and John S. Fayerweather, Bethel, Conn. Galley.....	Sept. 6, 1870
108,076	Wile, Daniel H., New Pittsburgh, Ohio. Hay-knife.....	Oct. 4, 1870
99,736	Wiler, William, assignor to self and Lucien Moss, Philadelphia, Pa. Safety-box for bank-porters.....	Feb. 8, 1870
110,411	Wiley, Benjamin B. (See Brown, Franklin H., assignor.)	
	Wiley, James, Warsaw, N. C. Cotton-plow.....	Dec. 20, 1870
	Wiley, James F., and Vincent E. Price. (See Atwood, Corydon F., assignor.)	
104,523	Wiley, John L., Vermont, Ill. Refrigerating-attachment for wells.....	June 21, 1870
101,070	Wiley, Moses H., assignor to self, Thomas Miller, and John H. B. Lang, East Boston, Mass. Oil-cabinet.....	Mar. 22, 1870
4,035	Same.....same.....(Reissue).....	June 14, 1870
104,389	Same.....same.....	June 14, 1870
103,404	Wiley, Moses H., and Thomas Miller, assignors to selves and John H. B. Lang, Boston, Mass. Apparatus for measuring liquids.....	May 24, 1870
105,871	Wilhelm, John H., Chicago, Ill. Curtain-fixture.....	July 26, 1870
109,037	Same.....same.....	Nov. 8, 1870
99,507	Wilkes, Dunham, Nineveh, Ind. Shingle-machine.....	Feb. 1, 1870
107,989	Wilkes, George, New York, N. Y. Corrugated metallic pavement.....	Oct. 4, 1870
100,958	Wilkin, Marmaduke, and John Clark, England. Automatic car-brake.....	Mar. 15, 1870
103,952	Wilkin, William M., Detroit, Mich. Saw-mill.....	June 7, 1870
108,665	Same.....Kalamazoo, Mich. Saw-mill.....	Oct. 25, 1870
	Wilkins, Cassander S., et al. (See Bicknell, Joseph G., assignor.)	
	Wilkins, Henry C. (See Jackson, William, assignor.)	
99,992	Wilkins, Horatio, and William H. Sangster, Paris, Ky. Motive-power apparatus. Wilkins, Josiah W., and Crawford S. Griffin. (See Griffin & Wilkins.)	Feb. 15, 1870
	Wilkins, W. A., et al. (See Ham, John D., assignor.)	
3,817	Wilkinson, George, assignor to Gorham Manufacturing Company, Providence, R. I. Egg-cup and salt-stand.....(Design).....	Jan. 11, 1870
3,922	Same.....Spoon and fork.....(Design).....	Mar. 22, 1870
3,923	Same.....Fancy spoon and fork work.....(Design).....	Mar. 22, 1870
3,924	Same.....Spoon and fork.....(Design).....	Mar. 22, 1870
100,577	Wilkinson, James, Albany, N. Y. Sash-holder.....	Mar. 8, 1870
108,666	Wilkinson, James T., Lockport, N. Y. Roofing-cement. (Antedated Oct. 8, 1870.)	Oct. 25, 1870
105,753	Wilkinson, John Atwater, Wilson, N. Y. Safety-guard for railway-cars.....	July 26, 1870
104,807	Wilkinson, Joseph B., Troy, N. Y. Cooking-stove.....	June 28, 1870
	Same.....(See Hermance, Richard M., assignor).....(Two cases.)	
101,954	Wilkinson, Joseph H., South New Market, N. H. Lubricator.....	April 12, 1870
101,955	Same.....Concord, N. H. Wood pavement.....	April 12, 1870
102,345	Wilkinson, Nelson J., Kalamazoo, Mich. Hoisting-machine.....	April 26, 1870
106,641	Wilkinson, William H., Southwick, Mass. Logotype. (Antedated Aug. 12, 1870.)	Aug. 23, 1870
107,577	Will, Frederick A., San Francisco, Cal. Pruning-shears.....	Sept. 20, 1870
99,801	Willard, Henderson, Grand Rapids, Mich. Stove for burning stumps. (Antedated Jan. 29, 1870.)	Feb. 15, 1870
101,956	Same.....Barrel.....	April 12, 1870
101,957	Same.....Chair.....	April 12, 1870
102,346	Same.....Barrel.....	April 26, 1870
102,347	Same.....same.....	April 26, 1870
102,348	Same.....Broiler for meat.....	April 26, 1870
103,000	Same.....Barrel.....	May 10, 1870
103,001	Same.....Method of forming cylinders.....	May 10, 1870
3,968	Same.....Stove for burning stumps.....(Reissue).....	May 10, 1870
110,412	Willard, Horatio, Evansville, Ind. Lock.....	Dec. 20, 1870
107,145	Willard, Horatio, and Peter Trunz, Evansville, Ind. Lock.....	Sept. 6, 1870
	Willcox & Gibbs Sewing-Machine Company. (See Willcox, Charles H., assignor.)	
	Same.....(See Carleton, Cyrus, assignor.)	
3,795	Willcox, Charles H., assignor through mesue assignments to the Willcox & Gibbs Sewing-Machine Company, New York, N. Y. Sewing-machine. (Re-issue).....	Jan. 11, 1870
99,126	Willcox, Charles H., assignor to the Willcox & Gibbs Sewing-Machine Company, New York, N. Y. Treadle for sewing-machine.....	Jan. 25, 1870
106,242	Same.....Sewing-machine table.....	Aug. 9, 1870
	Willcox, Joseph, and Henry B., et al. (See Hatfield, Charles, B., assignor.)	
	Willcutt, Levi L., et al. (See Roberts, John, assignor.)	
100,228	Willey, Freeman O., Wilmette, Ill. Broom-brace.....	Feb. 22, 1870
	Williams, Aaron White Cook. (See Loader, John, assignor.)	
	Same.....(See Loader & Child, assignors.)	
	Williams, Abby A., and William Pratt. (See Sawyer, Charles B., assignor.)	
103,002	Williams, Allison L., assignor to self and John H. Bell, Orth, Ind. Flour-bolting reel.....	May 10, 1870
102,900	Williams, Benjamin J., Philadelphia, Pa. Blind, screen, and shutter.....	May 10, 1870
99,737	Williams, Blasius, Jefferson, Texas. Apparatus for transmitting power.....	Feb. 8, 1870
	Williams, Burrett H., and William H. H. Gorham. (See Gorham & Williams.)	
101,335	Williams, Caleb, Newark, N. J. Washing-machine.....	Mar. 29, 1870
101,690	Williams, Carmi Henderson, Rhinebeck, N. Y. Brick-machine.....	April 5, 1870
108,743	Williams, Charles, jr., Somerville, Mass., and Jerome Redding, Charlestown, Mass. Electro-magnetic alarm-gong.....	Oct. 25, 1870
103,266	Williams, Charles D., St. Paul, Minn. Artificial fuel.....	May 17, 1870
110,179	Williams, Charles H., Cleveland, Ohio. Machine for making coupling-pins.....	Dec. 13, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
104,090	Williams, Daniel, and Edward Joseph, Gallipolis, Ohio. Revolving steam-gauge cock.....	June 7, 1870
108,543	Williams, David E., Davenport, Iowa. Cartridge.....	Oct. 18, 1870
	Williams, Edward, <i>et al.</i> (See Wood, Enoch, assignor.)	
103,807	Williams, Edward P., Elizabeth, N. J., and George H. Chinnoek, New York, N. Y. Hand-toilet mirror-frame.....	May 31, 1870
103,808	Same.....	May 31, 1870
103,809	Same.....Toilet-mirror and other frames.....	May 31, 1870
	Same.....(See Chinnoek & Williams.)	
4,001	Williams, Francis H., Syracuse, N. Y. Construction of safes..... (Reissue) ..	May 31, 1870
	Williams, Garner C., and Albert J. Blakslee. (See Blakslee & Williams.)	
	Williams, George D., <i>et al.</i> (See Burbank, Abner, assignor.)	
109,088	Williams, Isaac, Westfield, N. Y. Device for unloading wagons.....	Nov. 8, 1870
98,534	Williams, John D., Allegheny City, Pa. Fix for boiling and puddling furnaces.....	Jan. 4, 1870
102,189	Williams, John D., New York, N. Y. Copy-book.....	April 19, 1870
104,091	Williams, John De Witt, assignor to self and John Wilson Butler, Philadelphia, Pa. Manufacture of iron.....	June 7, 1870
104,808	Williams, John H., Pleasant Hill, Ohio. Reed for looms.....	June 28, 1870
103,544	Same.....Tire-setting machine.....	Oct. 18, 1870
98,900	Williams, John I., Millvale, Pa. Apparatus for rolling metal.....	Jan. 18, 1870
101,336	Williams, John P., Mobile, Ala. Coffee-pot.....	Mar. 29, 1870
109,089	Williams, John R., Taunton, Mass. Brick-machine.....	Nov. 8, 1870
	Williams, John S., and William C. Stiver. (See Stiver & Williams.)	
107,578	Williams, John T., Chicago, Ill. Knob-latch.....	Sept. 20, 1870
	Williams, Levi, <i>et al.</i> (See Tucker, Williams & Coppock.)	
98,533	Williams, Lewis, Terryville, Conn. Egg-beater.....	Jan. 4, 1870
110,180	Williams, Lewis, Arlington, Vt. Mop-head.....	Dec. 13, 1870
101,337	Williams, Mollie, Camden, Ohio. Device for measuring, laying out, and forming corsets.....	Mar. 29, 1870
108,864	Williams, Morris D., Dakota, Iowa. Brick-machine.....	Nov. 1, 1840
107,429	Williams, O. T., Smithland, Ky. Shingle-machine.....	Sept. 13, 1870
3,958	Williams, Richard Mortimer, Rockville, Md. Harvester..... (Reissue) ..	May 3, 1870
105,754	Williams, Richard Price, England. Railway-crossing. (Patented in England Feb. 22, 1869).....	July 26, 1870
104,524	Williams, Richard S., New York, N. Y. Preparing gold for dentists' use.....	June 21, 1870
109,986	Williams, Robert A., Colusa, Cal. Bee-hive.....	Dec. 6, 1870
108,077	Williams, Robert C., Frankfort, Ky. Umbrella.....	Oct. 4, 1870
	Williams, R. T., Nelson, and Joseph. (See Dunn, William R., assignor.)	
109,699	Williams, Stephen, Philadelphia, Pa. Mangling and ironing machine.....	Nov. 29, 1870
107,745	Williams, Stephen G., Trumansburgh, N. Y. Mill-pick.....	Sept. 27, 1870
107,579	Williams, Theodore Dwight, Chicago, Ill. Compound for stuffing and finishing leather.....	Sept. 20, 1870
106,439	Williams, Theron R., assignor to Chester Guild, jr., Salem, Mass. Machine for working hides, scouring leather, &c.....	Aug. 16, 1870
109,282	Williams, Thomas, Tompkinsville, N. Y. Roach and bug trap.....	Nov. 15, 1870
	Same.....(See Anthony, Richard, assignor.)	
103,534	Williams, Thomas Scott, and Freeman Augustus Taber, assignors to Thomas S. Williams and Philip S. Page, Boston, Mass. Treating candle and lamp wick.....	May 24, 1870
103,810	Williams, Thomas Scott, and Freeman Augustus Taber, Boston, Mass. Candle-lamp.....	May 31, 1870
104,525	Same.....Lamp for burning candles.....	June 21, 1870
105,020	Same.....Candle-lamp.....	July 5, 1870
110,526	Williams, Thomas S., assignor to self and Philip S. Page, Boston, Mass. Lamp. Williams, Thomas Scott, and Philip Sidney Page. (See Taber, Freeman Augustus, assignor.)	Dec. 27, 1870
103,811	Williams, Turner, assignor to self and E. D. Goodrich, Providence, R. I. Egg-beater.....	May 31, 1870
3,944	Williams, William, Rochester, N. Y. Insole for boots and shoes..... (Reissue) ..	April 26, 1870
99,508	Williams, William, assignor to self and Daniel Harrington, Vallejo, Cal. Swivel-shackle.....	Feb. 1, 1870
101,691	Williams, William H., Little Falls, N. Y. Street-pavement.....	April 5, 1870
	Same.....(See Fisher, Henry, assignor.)	
100,348	Williams, W. H., assignor to self and C. H. Williams, Canton, Ohio. Machine for paring fruit.....	Mar. 1, 1870
	Williams, William H. H., <i>et al.</i> (See Westcott, Charles S., assignor.)	
4,142	Williams, William L., assignor to self and Thomas J. O'Connor, New York, N. Y. Machine for bundling wood..... (Reissue) ..	Oct. 4, 1870
110,527	Williams, William L., New York, N. Y. Seat-guard for hobby-horses. (Ante-dated Dec. 17, 1870).....	Dec. 27, 1870
102,637	Williams, Willis D., Raleigh, N. C. Machine for bending wood.....	May 3, 1870
107,147	Williamson, George S., assignor to self and Edwin R. McKean, Gallatin, Tenn. Apparatus for and process of distillation.....	Sept. 6, 1870
	Williamson, Gustavus A., and Samuel T. Shattuck. (See Herreshoff, James B., assignor.)	
106,642	Williamson, Moses B., and John T. Carter. (See Carter & Williamson.)	
	Williamson, William C., assignor to Williamson Brothers, Philadelphia, Pa. Hoisting-machine.....	Aug. 23, 1870
98,535	Willis, A. D., Crawfordsville, Ind. Medical compound.....	Jan. 4, 1870
100,229	Willis, Herbert L., South Easton, Mass. Sand-paper holder for finishing the soles of boots and shoes.....	Feb. 22, 1870
108,545	Willis, James, Mifflin, Wis. Sled-brake.....	Oct. 18, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Willis, J. D. ( <i>See Schmucker, John P., assignor.</i> )	
102,457	Willoughby, J. D., Shippensburg, Pa. Lamp-burner .....	April 26, 1870
109,987	Wills, Harry A., assignor to National Horse-Nail Company, Vergennes, Vt. Machine for pointing nails .....	Dec. 6, 1870
103,267	Willson, Henry, Chicago, Ill. Embossing-attachment for printing-presses .....	May 17, 1870
	Willson, T. W., and Leonard Sterling. ( <i>See Sterling &amp; Willson.</i> )	
106,440	Willson, William J., Coles County, Ill. Press for baling broom-corn. (Ante-dated July 30, 1870) .....	Aug. 16, 1870
100,959	Willson, W. N. C., Summit Point, W. Va. Gauge for tobacco-cutters .....	Mar. 15, 1870
106,243	Wilmington, William, Toledo, Ohio. Cast-iron car-wheel .....	Aug. 9, 1870
4,102	Same.....Chill for casting car-wheels .....	Aug. 16, 1870
108,078	Wilnot, Samuel R., Bridgeport, Conn. Lamp-burner .....	Oct. 4, 1870
108,667	Same.....same .....	Oct. 25, 1870
	Wilnot, S. R., <i>et al.</i> ( <i>See Egge, Frederick, assignor.</i> ) .....	(Reissue.)
	Wilson, Alvin W., and Henry Broomell. ( <i>See Broomell &amp; Wilson.</i> )	
109,283	Wilson, Arthur G., Chicago, Ill. Measuring-can. (Antedated Nov. 5, 1870) .....	Nov. 15, 1870
109,858	Wilson, Bartholomew, and Franklin P. Grimes, Dayton, Ohio. Wire-fence .....	Dec. 6, 1870
102,638	Wilson, Charles C., Baltimore, Md. Former for hoop-skirts. (Antedated April 18, 1870) .....	May 3, 1870
98,831	Wilson, C. F., Brooklyn, N. Y. Card-rack .....	Jan. 11, 1870
104,526	Wilson, Charles G., Brooklyn, N. Y. Mercurial-expansion engine .....	June 21, 1870
110,101	Wilson, Elijah, New Brighton, Pa. School-desk .....	Dec. 13, 1870
99,386	Wilson, Elisha, New York, N. Y. Electric clock .....	Feb. 1, 1870
102,743	Wilson, F. C., Watkins, N. Y. Pump .....	May 3, 1870
107,580	Wilson, George, Chicago, Ill. Bedstead and table .....	Sept. 20, 1870
107,581	Same.....Adjustable table .....	Sept. 20, 1870
104,914	Wilson, Henry, England. Impermeator for steam-engines .....	June 23, 1870
	Wilson, Henry Pendleton Taylor, and Charles Nelson Hitchcock. ( <i>See Hitchcock &amp; Wilson.</i> )	
	Wilson, James. ( <i>See Alvord, Joseph D., assignor.</i> )	
100,481	Wilson, James, assignor to William Simon, Philadelphia, Pa. Valve-cock .....	Mar. 1, 1870
104,390	Wilson, James, assignor to Elizabeth, John, jr., and George Matthews, New York, N. Y. Tool for making bottles .....	June 14, 1870
102,458	Wilson, James Edward, Bridgeport, Conn. Pump .....	April 26, 1870
99,043	Wilson, James S., assignor to Phelps, Park & Co., Allegheny City, Pa. Wagon .....	Jan. 18, 1870
4,197	Wilson, James T., Rochester, N. Y. Mold-board .....	June 28, 1870
106,441	Same.....Rotary steam-plow .....	Aug. 16, 1870
105,021	Wilson, John, and George H. Baisley, Hamilton, Mo. Well-auger .....	July 5, 1870
109,479	Wilson, John C., New York, N. Y. Hair-clipping device .....	Nov. 22, 1870
3,999	Wilson, John C., assignor to Richard Campbell, New York, N. Y. Skewer-cushion .....	(Design)
109,090	Wilson, John J., New York, N. Y. Pot for glue, paint, &c .....	April 26, 1870
99,509	Wilson, John Wall, New York, N. Y. Car brake and starter .....	Nov. 8, 1870
100,482	Same.....Gun-carriage .....	Feb. 1, 1870
4,154	Same.....same .....	Mar. 1, 1870
102,672	Same.....same .....	Oct. 11, 1870
106,301	Wilson, Joseph C., Winneconne, Wis. Locomotive and car brake .....	April 19, 1870
	Wilson, Josiah B., assignor through mesne assignments to self, Philip W. Lawrence, and Walter Reckless, Philadelphia, Pa. Washing-machine .....	Aug. 9, 1870
101,692	Wilson, L. B., Cambridge, Ohio. Blow-pipe .....	April 5, 1870
105,533	Wilson, Nimrod E., Wilsonburgh, W. Va. Oscillating-churn .....	July 19, 1870
101,693	Wilson, Robert, Des Moines, Iowa. Snow-plow for railways .....	April 5, 1870
107,315	Wilson, Samuel, Watertown, N. Y. Cheese-hoop .....	Sept. 13, 1870
98,832	Wilson, Samuel M., New York, N. Y. Vegetable-grater. (Antedated Dec. 24, 1869) .....	Jan. 11, 1870
	Wilson, Samuel S. ( <i>See Campbell, Alexander, assignor.</i> )	
	Wilson, Thomas E., and Herbert P. Reed. ( <i>See Reed &amp; Wilson.</i> )	
102,639	Wilson, William, Boston, Mass. Coal-hod. (Antedated May 18, 1870) .....	May 3, 1870
102,349	Wilson, William and David, New York, N. Y. Bottle-stopper .....	April 26, 1870
106,905	Wilson, William M., and Dallas S. Denton, Polk County, Mo. Medical compound .....	Aug. 30, 1870
102,901	Wimer, Peter R., Trenton, N. J. Crutch .....	May 10, 1870
101,694	Wimer, William, Union City, Ind. Car-coupling .....	April 5, 1870
99,802	Winans, George G., Scranton, Pa. Elevating-apparatus .....	Feb. 15, 1870
	Winchester, Arthur S. ( <i>See Parsons, James S., assignor.</i> )	
105,755	Winchester, Arthur St. Clair, assignor to self and James Seton Parsons, Boston, Mass. Metallic-plate screen for screening paper-pulp .....	July 26, 1870
	Winchester, George C. ( <i>See Bingham, O. A., assignor.</i> ) (Four cases.) (Reissue.)	
	Same.....( <i>See Fitts, Samuel L., assignor.</i> )	
105,022	Winchester, Gilman K., Providence, R. I. Stop-motion spring for braiding-machines .....	July 5, 1870
106,906	Windeck, Albert, Peoria, Ill. Folding-table .....	Aug. 30, 1870
103,697	Winder, John W., Cincinnati, Ohio. Bee-hive .....	May 31, 1870
101,198	Windhausen, Franz, Germany. Ice-machine .....	Mar. 22, 1870
105,534	Windsor, George W., assignor to self and John F. Beilstein, Allegheny City, Pa. Lifting-jack .....	July 19, 1870
	Windsor Manufacturing Company. ( <i>See Case, G. F., assignor.</i> )	
100,094	Wing, Benjamin A., Galesburgh, Mich. Bolt-feeder for mills .....	Feb. 22, 1870
109,788	Wing, Daniel S., Rome, N. Y. Bag-holder .....	Nov. 29, 1870
102,744	Wing, George A., Albany, N. Y. Hay rake and loader .....	May 3, 1870
105,535	Same.....Base-burning stove. (Antedated July 12, 1870) .....	July 19, 1870
106,422	Same.....Stove or furnace-grate .....	Aug. 16, 1870
102,640	Wing, William R., Newark, Ohio. Strap-fastener .....	May 3, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
99,510	Wingard, Adam, San Francisco, Cal. Paddle-wheel.....	Feb. 1, 1870
108,668	Winger, Martin, Ephrata, Pa. Bark-shaving machine.....	Oct. 25, 1870
108,669	Same..... Manufacture of quercitron bark.....	Oct. 25, 1870
	Winkelhaus, Philipp, and Hermann Reutti. (See Reutti & Winkelhaus.)	
107,146	Wing, Thomas S., Lawrence, Mass. Drawing-frame.....	Sept. 6, 1870
108,225	Winslow, Alonzo P., Cleveland, Ohio. Machine for making nails.....	Oct. 11, 1870
4,214	Same..... Machine for cutting nails..... (Reissue)	Dec. 20, 1870
103,405	Winslow, Charles P., assignor to self and L. P. Day, Westborough, Mass. Washing-machine.....	May 24, 1870
103,953	Winsor, Frank Knowlton, Hillsdale, Mich. Lime barrel or kibble.....	June 7, 1870
	Winston, Joseph S., and Edward T. Smith. (See Smith & Winston.) (Design.)	
106,976	Winston, Lucius, Pontiac, MI. Corn-planter.....	Aug. 30, 1870
109,165	Same..... Swing.....	Nov. 8, 1870
102,641	Winter, Henry, assignor to self and Thomas W. Ball, Honesdale, Pa. Bending-machine.....	May 3, 1870
109,091	Winter, Hiram A., Windsor, Ill. Ditching and grading machine.....	Nov. 8, 1870
104,241	Winter, Robert, San Francisco, Cal. Coloring photographs.....	June 14, 1870
	Winterbottom, John, and Joseph Duvall. (See Duvall & Winterbottom.)	
104,242	Winterburn, Andrew, Albany, N. Y. Stove-grate.....	June 14, 1870
	Winters, George. (See Kline, Jacob, assignor)..... (Two cases.)	
102,902	Wire, Henry C., Wilmington, Ohio. Wire and stone fence combined.....	May 10, 1870
108,865	Wisdom, Charles, Flat Rock, Mich. Corn-planter.....	Nov. 1, 1870
101,800	Wisdom, Philip, Brooklyn, N. Y., and John H. Wilcox, New York, N. Y. Machine for twisting and curling hair.....	April 12, 1870
105,286	Wise, James M., Wilmington, N. C. Mechanism for operating booms of vessels.....	July 12, 1870
109,092	Wise, Joseph, Elizabeth, N. J. Machine for booking tobacco leaves. (Ante-dated Oct. 22, 1870).....	Nov. 8, 1870
102,190	Wise, Morris, New York, N. Y. Button-fastening.....	April 19, 1870
108,744	Wisner, James E., Friendship, N. Y. Horse hay-rake.....	Oct. 25, 1870
109,700	Same..... same.....	Nov. 29, 1870
108,546	Wissler, Aaron, Brunersville, Pa. Separator for thrashing-machines.....	Oct. 18, 1870
4,097	Wiswall, Samuel, assignor to Albert H. Spencer, Hyde Park, Vt. Extension wash-bench..... (Reissue)	Aug. 9, 1870
101,338	Witherby, Thomas H., Worcester, Mass. Mowing-machine.....	Mar. 29, 1870
101,339	Same..... Shearing and punching machine.....	Mar. 29, 1870
104,092	Witherell, Loren R., and Amasa B. Crandall, Galesburgh, Ill. Dusting-brush.....	June 7, 1870
110,518	Withey, Jerome B., Detroit, Mich. Running-gear for carriages.....	Dec. 27, 1870
103,113	Withington, Phineas M., Stoughton, Mass. Knife-sharpener.....	May 17, 1870
100,578	Withmar, Arnold, St. Louis, Mo. Lantern.....	Mar. 8, 1870
105,616	Witsil, George L., assignor to self and Thomas L. Bates, Philadelphia, Pa. Washing-machine.....	July 19, 1870
110,181	Witsil, George L., Philadelphia, Pa. Washing-machine.....	Dec. 13, 1870
105,399	Witt, Caleb W. and Bennett F., assignors to Bennett F. Witt, Indianapolis, Ind. Harvester.....	July 12, 1870
107,430	Witte, William F., assignor to Charles Robbins, Whitemarsh, Pa. Washing-machine for waste, &c.....	Sept. 13, 1870
101,203	Wittram, Frederick, San Francisco, Cal. Dress-protector.....	Mar. 22, 1870
109,093	Wixom, Albert R., Farmington, Mich. Potato-digger.....	Nov. 8, 1870
101,398	Woerd, Charles V., Waltham, Mass. Watch.....	Mar. 29, 1870
110,614	Same..... Watch-regulator.....	Dec. 27, 1870
108,422	Wohlenberg, John P. H., Lyons, Iowa. Mill-stone dress.....	Oct. 18, 1870
106,102	Wolcott, Charles H., Jamestown, N. Y. Clothes-rack.....	Aug. 2, 1870
108,745	Wolcott, Henry E., assignor to self, Russell B. Wheeler, and Ezekiel B. Hoyt, Eldridge, N. Y. Spring for vehicles.....	Oct. 25, 1870
110,182	Wolcott, Henry E., assignor of two-thirds interest to Russell B. Wheeler and Ezekiel B. Hoyt, Eldridge, N. Y. Pump.....	Dec. 13, 1870
104,678	Wolcott, Russell F., assignor to Austin C. Chase, Claremont, N. H. Car-coupling.....	June 21, 1870
101,199	Wolf, A. N., Sheridan, Pa., and Joel Haag, Bernville, Pa. Water-wheel.....	Mar. 22, 1870
	Wolf, James, and Sylvester D. Barber. (See Barber & Wolf.)	
102,191	Wolff, Herman, Milwaukee, Wis. Shutter-worker.....	April 19, 1870
102,192	Same..... same.....	April 19, 1870
105,400	Same..... same.....	July 12, 1870
99,615	Wolff, Joseph, Lexington, Ky. Manufacture of yeast for distillers.....	Feb. 8, 1870
3,959	Same..... Cincinnati, Ohio. Manufacture of yeast for distillers. (Reissue)	May 3, 1870
107,582	Wolff, Julius, New York, N. Y., and William N. Numsen, Baltimore, Md. Bottle-corking machine.....	Sept. 20, 1870
101,340	Wolff, Louis, Chicago, Ill. Liniment for burns, scalds, &c.....	Mar. 29, 1870
101,555	Wolff, Ludwig, assignor to self, David G. Rush, H. J. Pahlman, and Charles Welsh, Chicago, Ill. Combination distilling-apparatus.....	April 5, 1870
102,903	Wolff, Robert, assignor to self and Bernard Silverman, New York, N. Y. Brick-machine.....	May 10, 1870
102,073	Wolff, Uriah S., Burrel Township, Pa. Feeding-apparatus for nail-machine.....	April 19, 1870
100,579	Wolffington, W. P., Louisville, Ky. Method of laying off patterns for stitching on leather.....	Mar. 8, 1870
103,268	Wolffkiel, Walter F., assignor to Morris, Tasker & Co., Philadelphia, Pa. Wrench.....	May 17, 1870
110,183	Wolffa, Jacob, assignor to the Union Omnibus and Wagon Manufacturing Company, Cincinnati, Ohio. Wagon-brake.....	Dec. 13, 1870
105,872	Wolford, John B., assignor to self and Thomas B. Whitley, Lancaster, Ohio. Corn-sheller.....	July 26, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,200	Wolle, Clarence E., and Simon E. Pettee. ( <i>See Pettee &amp; Wolle.</i> )	
109,701	Wolpert, John, Louisville, Ky. Combined plow and cultivator.....	Mar. 22, 1870
109,988	Wonderlin, John, Louisville, Ky. Horse or mule shoe.....	Nov. 29, 1870
103,114	Woularlarsky, Nicolaus, Russia. Hoisting-machine.....	Dec. 6, 1870
109,989	Wouner, Miledon, Norwalk, Ohio. Carriage-wheel.....	May 17, 1870
105,873	Wood, Alfred A., Charlotte, Mich. Watch-case.....	Dec. 6, 1870
	Wood, Aurin, Worcester, Mass. Machine for nicking screw-blanks.....	July 26, 1870
	Wood, Aurin, <i>et al.</i> ( <i>See Taft, Timothy F., assignor.</i> )	
106,015	Wood, Benjamin B., Negaunee, Mich. Spike-drawer.....	Aug. 2, 1870
101,556	Wood, Charles L., and Cornelius A. Sheridan, Cleveland, Ohio. Machine for making cornice-moldings.....	April 5, 1870
	Wood, Charles L., <i>et al.</i> ( <i>See Blackburn, Wood, Price &amp; Sheridan.</i> )	
106,526	Wood, Cornell J., Brewerton, N. Y. Thread-cutter for sewing-machines.....	Aug. 16, 1870
106,643	Wood, David S., Tiskilwa, Ill. Combination of ochres for paints.....	Aug. 23, 1870
4,159	Same..... Ochre for paints..... (Reissue.)	Oct. 18, 1870
93,901	Wood, David W., and Manuel Van Slyke. ( <i>See Van Slyke &amp; Wood.</i> ) (Reissue.)	
	Wood, De Volson, Ann Arbor, Mich. Pneumatic reciprocating movement. (Antedated Jan. 10, 1870)	Jan. 18, 1870
3,868	Wood, Edwin A., Utica, N. Y. Pressure-gauge case..... (Design.)	Jan. 18, 1870
102,350	Same..... Pressure-gauge. (Antedated March 19, 1870)	April 26, 1870
	Wood, Ed. E., and Dexter D. Hardy. ( <i>See Hardy &amp; Wood.</i> )	
109,234	Wood, Enoch, assignor to self, Edward and Richard Perry, William McPherson, and Edward Williams, Pittsburgh, Pa. Rotary puddling-furnace.....	Nov. 15, 1870
106,644	Wood, Eugene K., De Witt, Iowa. Combined scrubbing-brush, &c.....	Aug. 23, 1870
100,700	Wood, George, Philadelphia, Pa. Floor-clamp.....	Mar. 8, 1870
107,316	Wood, George, Cambridgeport, Mass. Reed-organ.....	Sept. 13, 1870
106,907	Wood, George B., Chicago, Ill. Apparatus for treating club-feet.....	Aug. 30, 1870
102,351	Wood, George W., assignor to Joseph W. Kendall, New York, N. Y. Ear-brush.....	April 26, 1870
107,317	Wood, Henry, England. Platform-scale.....	Sept. 13, 1870
	Wood, James, <i>et al.</i> ( <i>See Durham, Wood &amp; Hair.</i> )	
	Wood, James, and Theodore Hair. ( <i>See Hair &amp; Wood.</i> )	
102,459	Wood, James T., Philadelphia, Pa. Gouge.....	April 26, 1870
109,702	Wood, James W., Alden, Ill. Bee-house.....	Nov. 29, 1870
102,193	Wood, John H., Lebanon, Ohio. Artificial teeth.....	April 19, 1870
106,244	Wood, Joel, Martinsville, Ohio. Earth-closet.....	Aug. 9, 1870
	Wood, John, <i>et al.</i> ( <i>See Meredith, Samuel, assignor.</i> )	
105,023	Wood, John A., Far Rockaway, N. Y. Sawing-machine.....	July 5, 1870
	Wood, John F. ( <i>See Sorel, Stanislas, assignor.</i> ) (Two cases.)	
110,102	Wood, John F., assignor to the Union Stone Company, Boston, Mass. Manufacture of emery-wheels.....	Dec. 13, 1870
107,844	Wood, John J., North Manchester, Ind. Animal-trap. (Antedated Sept. 17, 1870).	Sept. 27, 1870
101,557	Wood, Joseph S., assignor to self and John J. Carberry, Philadelphia, Pa. Apparatus for generating and carburizing hydrogen gas.....	April 5, 1870
101,558	Same..... Generating hydrogen and hydrocarbon gas.....	April 5, 1870
105,756	Same..... Gas-apparatus for railroad-cars, &c.....	July 26, 1870
105,757	Same..... same.....	July 26, 1870
110,321	Wood, Morris, Chillicothe, Ill. Steam-generating apparatus.....	Dec. 20, 1870
	Wood, Renben. ( <i>See Seobey, George V., assignor.</i> )	
102,789	Wood, Romanso E., Santa Cruz, Cal. Animal-trap.....	Nov. 29, 1870
106,443	Wood, Stephen S., Brooklyn, N. Y. Ditching-plow.....	Aug. 16, 1870
109,480	Same..... Ditching-machine.....	Nov. 22, 1870
100,230	Wood, Thomas, Matteawan, N. Y. Machine for making nails and spikes.....	Feb. 22, 1870
101,071	Wood, Thomas E., Waseca, Minn. Compound to be applied to roofing.....	Mar. 22, 1870
105,257	Wood, Thomas H., New York, N. Y. Folding carriage-top.....	July 12, 1870
105,753	Same..... Folding buggy-top.....	July 26, 1870
	Wood, Valentine and George W., <i>et al.</i> ( <i>See Lowe, John K., assignor.</i> ) (Reissue.)	
	Wood, Walter A., Mowing and Reaping Machine Company. ( <i>See Partridge, William, assignor.</i> )	
101,341	Wood, William E., Baltimore, Md. Base-burning fire-place stove.....	Mar. 29, 1870
102,074	Woodard, Alvin N., Fenton, Mich. Belt-tightener.....	April 19, 1870
106,908	Woodard, Stephen and Albert, Saratoga, Ind. Harrow.....	Aug. 30, 1870
103,812	Woodberry, Richard A., assignor to self and Francis Norwood, 2d., Beverly, Mass. Handle for edge-keys.....	May 31, 1870
110,184	Woodburn, Jacob, St. Louis, Mo., and Samuel F. Smith, Indianapolis, Ind., assignors to Osgood, Smith & Co. Machine for bending plow-handles.....	Dec. 13, 1870
100,483	Woodbury, D. A., Rochester, N. Y. Reversing-gear for steam-engines.....	Mar. 1, 1870
103,698	Same..... Reversing and cut-off apparatus for steam-engines.....	May 31, 1870
107,746	Same..... Automatic cut-off for steam-engines.....	Sept. 27, 1870
105,670	Woodbury, Edwin, Sharon, Pa. Railway-gate.....	Oct. 25, 1870
101,072	Woodbury, George E., Cambridge, Mass. Planing-machine.....	Mar. 22, 1870
	Woodbury, James A. ( <i>See Shaw, Henry F., assignor.</i> )	
110,322	Woodbury, Leander S., assignor to self and David F. Hunt, South Antrim, N. H. Fruit-parer.....	Dec. 20, 1870
102,460	Woodbury, Oscar D., New York, N. Y. Brush.....	April 26, 1870
110,529	Same..... Machine for making brushes.....	Dec. 27, 1870
106,016	Woodbury, Royal L., Lexington, Mass. Lap-board for dressmakers.....	Aug. 2, 1870
	Woodbury, Seth H., <i>et al.</i> ( <i>See Wright &amp; Rowe, assignors.</i> )	
100,701	Wooden, John L., Greensburgh, Ind. Collar and hames.....	Mar. 8, 1870
103,954	Wooding, Alvia L., Bristol, Conn. Machine for making ox-shoes.....	June 7, 1870
101,399	Woodley, Joseph, Quebec, Canada. Boot and shoe heel.....	Mar. 29, 1870
105,226	Woodman, Harvey T., Dubuque, Iowa. Wash-boiler.....	Oct. 11, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
	Woodman, Horace, Saco, Me. Machinery for cleaning top-flats of carding-engines..... (Disclaimer filed).....	June 16, 1870
	Same..... Machinery for cleaning top-flats of carding-engines.. (Extension).....	July 7, 1870
106,527	Woodruff, Chauncey D., Toledo, Ohio. Water-pipe support.....	Aug. 16, 1870
106,528	Same..... Ventilator for stove-pipes.....	Aug. 16, 1870
100,231	Woodruff, C. F., Newbern, Tenn. Ditcher.....	Feb. 22, 1870
108,950	Woodruff, Enos, Elizabeth, N. J. Earth-commode.....	Nov. 1, 1870
103,115	Woodruff, James, and Frederick Boyd, Quincy, Ill. Preparation of fibrous material.....	May 17, 1870
105,288	Woodruff, Jonah, Philadelphia, Pa. Sleeping-car.....	July 12, 1870
	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch.... (Extension).....	Dec. 1, 1870
	Same..... Railway-car seat and couch..... (Extension).....	Dec. 1, 1870
	Woodruff, Walter W. (See Swathel, Wilbur F., assignor.)	
	Woods, Charles A., et al. (See McGowan, Robert L., assignor.)	
	Woods, Edward P., et al. (See Sherwood, Daniel, assignor)..... (Reissue.)	
	Same..... (See Sherwood, Woods & Dudley.)	
	Same..... (See Sherwood, Daniel, assignor.)	
4,546	Woods, George, Cambridge, Mass. Case of a parlor-organ..... (Design).....	Dec. 27, 1870
	Woods, Sherwood & Co. (See Sherwood, Daniel, assignor)..... (Two cases.)	
	Same..... (See Sherwood, Woods & Dudley, assignors.)	
	Same..... (See Sherwood & Dudley, assignors.)	
	Same..... (See Wilcox, Horace C., assignor.)	
	Same..... (See Latham, Cyrus H., assignor.)	
	Same..... same..... (Reissue.)	
	Woods, Thomas, et al. (See Millingar, James, assignor.)	
	Same..... (See Hannen, H. S., assignor)..... (Reissue.)	
101,201	Woods, W. D., Bennington, N. H. Knife-handle.....	Mar. 22, 1870
108,746	Woods, William L., Washington, D. C. Paper-file.....	Oct. 25, 1870
105,874	Woodside, B. F., McDonald Station, Tenn. Percussion-cap. (Antedated July 15, 1870).....	July 26, 1870
	Woodside, George W., and Frederick Blackburn. (See Blackburn & Woodside.)	
	Woodward, A. H., and R. S. Craig. (See Craig & Woodward.)	
103,813	Woodward, Amos W., Rockford, Ill. Water-governor.....	May 31, 1870
104,391	Woodward, Arthur P., New York, N. Y. Card-cabinet.....	June 14, 1870
	Woodward, Benjamin. (See Coffin, David N. B., jr., assignor)..... (Reissue.)	
104,392	Woodward, David F., Jasper, N. Y. Milk-cooler.....	June 14, 1870
	Woodward, Erastus, and Duncan H. Campbell. (See Campbell & Woodward.)	
106,017	Woodward, Ferdinand, Sacramento, Cal. Stocking.....	Aug. 2, 1870
	Woodward, George M., et al. (See King, John C., assignor)..... (Two cases.)	
104,527	Woodward, John T., Bowling Green, Ky. Apparatus for bending and upsetting tire.....	June 21, 1870
	Woodward, Stephen, and Josiah Turner. (See Turner & Woodward.)	
101,958	Woodward, Theodore F., assignor to Hay & Co., Winslow, N. J. Fastening for fruit-jars.....	April 12, 1870
109,703	Same..... same.....	Nov. 29, 1870
104,915	Woodworth, Alfred, and Edward W. Warren, Cambridge, N. Y. Tool for driving glaziers' points.....	June 28, 1870
109,094	Woodworth, Elon G., John Brawdy, and Fitch Merithew, Birmingham, Pa. Machine for bending iron pipe for welding. (Antedated Oct. 29, 1870).....	Nov. 8, 1870
103,406	Woodcocks, Thomas J., New York, N. Y. Speaking-tube whistle.....	May 24, 1870
	Woolever, Adam, and William Harris. (See Harris & Woolever.)	
104,809	Wooley, Walton W., New York, N. Y. Mosquito-screen frame.....	June 28, 1870
108,547	Wolf, Jacob, Burr Oak, Mich. Mechanical movement.....	Oct. 18, 1870
109,790	Same..... same.....	Nov. 29, 1870
110,185	Same..... same.....	Dec. 13, 1870
110,186	Woolley, George Washington, Washington, D. C. Pen.....	Dec. 13, 1870
104,094	Woolrich, John H., Woburn, Mass. Condition-powder for horses and cattle.....	June 7, 1870
107,431	Woolsey, John B., Bloomfield, Iowa. Washing-machine.....	Sept. 13, 1870
108,227	Woolsey, Nathan, Ottawa, Ill. Fence.....	Oct. 11, 1870
	Woolson, Augustus N., et al. (See Frost, Henry S., assignor.)	
100,232	Woolston, Samuel, Vincentown, N. J., and William Corfield, Philadelphia, Pa. Reversible percolator.....	Feb. 22, 1870
	Woonsocket Rubber Company. (See Holt, John F., assignor)..... (Reissue.)	
	Same..... (See Flynn, Francis, assignor.)	
	Wooster, George H. (See Walker, William, assignor)..... (Two cases.)	
106,444	Wooster, Gilbert I., Plymouth, Conn. Hay-spreader.....	Aug. 16, 1870
104,093	Wootten, John Eastburn, Reading, Pa. Machinery for moving coal and other minerals.....	June 7, 1870
	Wootten, John E., and John J. Lahaye. (See Lahaye & Wootten.)	
99,803	Worcester, Edward J., Worcester, Mass. Drilling-machine.....	Feb. 15, 1870
108,747	Same..... Wrench.....	Oct. 25, 1870
108,748	Same..... Shingling-bracket.....	Oct. 25, 1870
110,530	Same..... Boring-machine.....	Dec. 27, 1870
107,845	Worden, Alva, Ypsilanti, Mich. Whip-socket clasp.....	Sept. 27, 1870
	Worden, William H. (See Butterfield, William, assignor.)	
3,913	Workman, William, assignor to Frederick H. Manny, Ripon, Wis. Seeding-machine..... (Reissue.)	April 12, 1870
110,103	Workman, William, and Jason Hitchcock, Ripon, Wis. Friction-block for attaching cultivator and other teeth.....	Dec. 13, 1870
99,616	Wormood, W. W., assignor to self and C. Hathaway, Dubuque, Iowa. Fare-box for street-cars.....	Feb. 8, 1870



*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
101,559	Worrall, Thomas H., East Blackstone, Mass. Grinding-machine .....	April 5, 1870
	Worrel, John, and James H. Reynerson. ( <i>See</i> Reynerson & Worrel.)	
100,831	Worrell, Stanley E., Quincy, Ill. Apparatus for washing and elevating lumber.	Mar. 15, 1870
107,645	Worthen, Daniel, Brooklyn, N. Y. Rectifying and improving alcoholic spirits..	Sept. 20, 1870
109,791	Worthen, Edward A., Springfield, Mass. Device for manufacturing metallic cartridge-shells. ....	Nov. 29, 1870
	Worthington, H. R., and Joseph Nason. ( <i>See</i> Nason & Worthington.)	
	Worthington, Lewis, <i>et al.</i> ( <i>See</i> Danks, Samuel, assignor.)	
101,695	Wottring, Reuben, Prospect, Ohio. Cultivator .....	April 5, 1870
104,679	Wrenshall, John C., Baltimore, Md. Car-coupling .....	June 21, 1870
104,680	Same..... Process and apparatus for preserving fruits, vegetables, &c....	June 21, 1870
101,959	Wright, Alexander, Wilmington, Del. Adjustable carriage-seat .....	April 12, 1870
104,243	Wright, Benjamin F., Charlestown, Mass. Chair-seat .....	June 14, 1870
105,759	Wright, Benjamin F., Charlestown, Mass., and John Rowe, jr., Wilmington, Mass., assignors of three-fifths interest to Seth H. Woodbury, William T. Gray, and Charles H. Drew. Preparing raw-hide for use in chair-seats .....	July 26, 1870
	Wright Brothers & Co. ( <i>See</i> Stevens, Mary, assignor.)	
	Same..... ( <i>See</i> McMichael, John, assignor.)	
107,990	Wright, Charles A., Rodney, Miss. Combined horse-power and baling-press....	Oct. 4, 1870
105,536	Wright, Charles D., Leesville, Conn. Water-wheel .....	July 19, 1870
	Wright, Charles E., <i>et al.</i> ( <i>See</i> Haswell & Irwin, assignors.)	
101,073	Wright, David Pitcairn, and Cephas Butler, England. Lamp-burner .....	Mar. 22, 1870
99,511	Wright, Edward, Worcester, Mass. Self-acting mule for spinning .....	Feb. 1, 1870
100,580	Wright, Elbridge G., Boston, Mass. Inlaying metallic surfaces .....	Mar. 8, 1870
109,095	Wright, Enos, Leo County, Iowa. Spring for vehicles .....	Nov. 8, 1870
107,995	Wright, George, Savannah, Ga. Washing-machine .....	Oct. 4, 1870
103,269	Wright, George C., Leroy, Ohio. Gearing for clothes-wringers .....	May 17, 1870
101,074	Wright, Homer, assignor to self and Henry H. and Benjamin F. Collins, Pittsburgh, Pa. Cap for fruit-jars .....	Mar. 22, 1870
104,393	Wright, Horton, assignor to self and O. D. Childs, Akron, Ohio. Musical staff..	June 14, 1870
101,075	Wright, Howell W., Taunton, Mass. Electro-plating apparatus .....	Mar. 22, 1870
106,977	Wright, Howell W., assignor to Albert Field Tack Company, Taunton, Mass. Coating tacks and nails with copper .....	Aug. 30, 1870
109,704	Wright, Jackson, Versailles, Ill. Gate .....	Nov. 29, 1870
105,024	Wright, Jackson & Green, Morrisania, N. Y. Stone-truck. (Antedated June 30, 1870) .....	July 5, 1870
109,481	Wright, James D., Columbia, Tenn. Means for adjusting the grain-wheel of harvesters .....	Nov. 22, 1870
108,548	Wright, Leander, Rochester, N. Y. Time-table indicator. (Antedated Oct. 13, 1870) .....	Oct. 18, 1870
104,528	Wright, Lemuel W., Brooklyn, N. Y. Paddle-wheel .....	June 21, 1870
99,993	Wright, Nathan, Cleveland, Ohio. Machine for re-turning crank-pins of locomotives .....	Feb. 15, 1870
	Wright, Ransom C. ( <i>See</i> Cummins & Isreal, assignors.)	
101,960	Wright, Robert L., West Nantmeal, Pa. Pump .....	April 12, 1870
102,352	Wright, Rufus, Brooklyn, N. Y. Lacing for shoes .....	April 26, 1870
106,645	Wright, Samuel, Hillsborough, Mo. Adjustable fruit-ladder .....	Aug. 23, 1870
105,760	Wright, Simeon M., Athens, Ohio. Boring and mortising machine .....	July 26, 1870
99,512	Wright, Thomas, assignor to John A. Holmes, New York, N. Y. Broom for stables, &c .....	Feb. 1, 1870
107,992	Wright, Walter S., Chicago, Ill. Type-planer .....	Oct. 4, 1870
	Wright, Wendell, Bloomfield, N. J. Mode of securing springs in upholstery. (Extension) .....	Dec. 10, 1870
100,702	Wright, William, New York, N. Y. Pump .....	Mar. 8, 1870
	Wright, W. A. ( <i>See</i> Bosom, Francis, assignor.)	
100,484	Wright, William H., Rochester, N. Y. Farm-gate .....	Mar. 1, 1870
100,485	Same..... Cattle-pump .....	Mar. 1, 1870
103,270	Wright, William P., Winamac, Ind. Fence .....	May 17, 1870
101,696	Wrightington, Charles D., Boston, Mass. Brick-machine .....	April 5, 1870
107,583	Same..... Fairhaven, Mass. Printing-press .....	Sept. 20, 1870
	Wriglesworth, John. ( <i>See</i> Wells, William, assignor.)	
	Wundram, G. W., <i>et al.</i> ( <i>See</i> Griffith, Wundram & Müller.)	
	Same..... ( <i>See</i> Müller, T. H., assignor.) .....	(Reissue.)
	Wundram, George W., and John Griffith. ( <i>See</i> Griffith & Wundram.)	
99,738	Wurtz, Henry, assignor to James Lorimer Graham, New York, N. Y. Artificial fuel .....	Feb. 8, 1870
99,739	Same..... Composition for moldings, picture-frames, &c .....	Feb. 8, 1870
99,740	Same..... Preparing anhydrous grahamite .....	Feb. 8, 1870
99,741	Same..... Chemical product called fused or anhydrous grahamite .....	Feb. 8, 1870
98,654	Wyatt, John, assignor to self and George Lewis, Philadelphia, Pa. Curtain-fixture. (Antedated Dec. 24, 1869) .....	Jan. 4, 1870
101,400	Wyatt, Robert, Brooklyn, N. Y. Brush-handle attachment. (Antedated March 19, 1870) .....	Mar. 22, 1870
105,289	Wyatt, William, Nashville, Tenn. Water regulator and alarm .....	July 12, 1870
108,671	Wyche, William E., Brookville, N. C. Cultivating-plow .....	Feb. 11, 1870
	Same..... Plow-handle. (Antedated Oct. 7, 1870) .....	Oct. 25, 1870
	Wycoff, Peter. ( <i>See</i> Livings, Francis, assignor.)	
105,401	Wyeth, Henry M., Newark, Ohio. Pump .....	July 12, 1870
	Same..... ( <i>See</i> McLain, James B., assignor.)	
100,832	Wyman, Martin L., assignor to Otis Tufts, Melrose, Mass. Elevator .....	Mar. 15, 1870
	Wyman, Martin L., and Charles E. Moore. ( <i>See</i> Moore & Wyman.)	

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
106,529	Wyndham, Charles, England. Velocipede.....	Aug. 16, 1870
105,619	Wayne, George M., and William MacGrove, Dennison, Ohio. Furnace for steam-engines.....	July 19, 1870
106,909	Yager, Charles E., Hudson, N. Y. Blacking box and brush.....	Aug. 30, 1870
	Yagle, William, <i>et al.</i> (See Rider, Leman P., assignor.)	
107,993	Yale, Charles O., New York, N. Y. Electro-magnetic safe-lock. (Antedated Sept. 24, 1870).....	Oct. 4, 1870
98,536	Yale, Linus, jr., deceased, by Silas N. Brooks, administrator, Bernardston, Mass. Permutation-lock.....	Jan. 4, 1870
108,866	Yancy, Edwin L., Batavia, N. Y., and Charles Edwin Dorman, Pembroke, N. Y. Apparatus for making cheese. (Antedated Oct. 29, 1870).....	Nov. 1, 1870
101,401	Yarrell, Pierce W., Littleton, N. C. Anti-friction journal.....	Mar. 29, 1870
101,402	Same..... Water-wheel.....	Mar. 29, 1870
110,323	Same..... Anti-friction journal.....	Dec. 20, 1870
103,271	Yaryan, Homer T., Nashville, Tenn. Apparatus for refrigerating and making ice.....	May 17, 1870
103,814	Yates, Arthur P., Syracuse, N. Y. Fountain.....	May 31, 1870
107,747	Yates, William P., Elmira, N. Y. Curtain-fixture.....	Sept. 27, 1870
104,010	Yeamans, Ira, Brooklyn, N. Y. Tea and coffee service.....	June 7, 1870
101,560	Yeiser, Edmund. Thill-coupling.....	April 5, 1870
102,642	Yenne, Louis, New York, N. Y. Adjustable awning-frame.....	May 3, 1870
107,584	Yenne, Louis, New York, N. Y., and Charles Schneider, Newark, N. J. Adjustable awning.....	Sept. 20, 1870
4,180	Yeoman, Edward, Waukegan, Ill. Bed-bottom..... (Reissue)	Nov. 15, 1870
103,116	Yergason, Christopher J., Brooklyn, N. Y. Apparatus for steaming lard and oil casks.....	May 17, 1870
	Yerkes, Jesse. (See Hart, Daniel, assignor.)	
	Yetter, Andrew B. (See Bancroft, L. F., assignor)..... (Reissue.)	
	Same..... (See Bancroft, John A., assignor.)	
107,846	Yewdall, John and William, Philadelphia, Pa. Wool-washing machine.....	Sept. 27, 1870
104,529	Yinger, John S., Manchester, Pa. Horse hay-fork.....	June 21, 1870
109,285	Yocom, James, jr., Philadelphia, Pa. Grate-bar.....	Nov. 15, 1870
104,681	York, James, jr., Monroe, Mich. Resawing-machine.....	June 21, 1870
103,272	Yorke, William, Portland, Me. Register for odometers, &c.....	May 17, 1870
	Yost, George W. N., <i>et al.</i> (See Bradford, Charles K., assignor.)	
104,810	Yost, Harrison, assignor to self and Henry Yost, Dayton, Ohio. Wash-boiler.....	June 28, 1870
99,994	Youart, John M., Indianapolis, Ind. Bee-hive.....	Feb. 15, 1870
104,394	Young, Alfred, Philadelphia, Pa. Lock for fire-arms.....	June 14, 1870
102,194	Young, Allen, Pittsborough, N. C. Medicine for coughs and colds.....	April 19, 1870
106,445	Young, Allen P., assignor of one-half interest to Albert H. Spencer, Providence, R. I. Portable bath-seat.....	Aug. 16, 1870
108,423	Young, Augustus R., Red Wing, Minn. Boiler-feeder.....	Oct. 18, 1870
109,363	Young, Benjamin F., Toulon, Ill. Cultivator.....	Nov. 15, 1870
	Young, Charles. (See Ford, Charles S., assignor)..... (Two cases.)	
107,318	Young, Charles H., Lake Village, N. H. Construction of cylinders of knitting-machines.....	Sept. 13, 1870
	Young, Charles M., and Grant T. Coolman. (See Coolman & Young.)	
109,096	Young, Charles P., Attleborough, Mass. Door-check.....	Nov. 8, 1870
	Young, Daniel, and Benjamin Wieland. (See Wieland & Young.)	
104,811	Young, Emil, Cleveland, Ohio. Faucet.....	June 28, 1870
102,745	Young, Francis M., Nashville, Tenn. Apparatus for distilling spirits.....	May 3, 1870
103,535	Same..... Apparatus for distilling and purifying liquor.....	May 24, 1870
106,646	Young, George E., assignor to self, Charles A. and Solomon W. Young, Providence, R. I. Table. (Antedated Aug. 19, 1870).....	Aug. 23, 1870
99,513	Young, Hugh, Middletown, Conn., and James L., New York, N. Y. Stone-cutting machine.....	Feb. 1, 1870
99,514	Same..... Tool for cutting stone, &c.....	Feb. 1, 1870
107,847	Same..... Machine for cutting stone. (Antedated Sept. 26, 1870).....	Sept. 27, 1870
108,228	Same..... Stone-cutting machine. (Antedated Oct. 1, 1870).....	Oct. 11, 1870
108,424	Same..... same.....	Oct. 18, 1870
108,425	Same..... Tool for cutting stone. (Antedated Oct. 2, 1870).....	Oct. 18, 1870
108,426	Same..... Steam-engine. (Antedated Oct. 8, 1870).....	Oct. 18, 1870
101,697	Young, James T., Washington, D. C. Time-indicator for letter-boxes.....	April 5, 1870
110,531	Young, John H. W., Henderson, Texas. Cotton cultivator, scraper, and chopper.....	Dec. 27, 1870
105,761	Young, John L., New York, N. Y. Folding counter-stool.....	July 26, 1870
109,705	Young, Josiah L., San Francisco, Cal. Sewing-mechanism. (Antedated Nov. 18, 1870).....	Nov. 29, 1870
	Young, Lewis D., <i>et al.</i> (See Tuell, Melzer, assignor.)	
104,682	Young, Lewis V., St. Louis, Mo. Breech-loading fire-arm.....	June 21, 1870
105,762	Young, McClintock, Frederick, Md. Lantern.....	July 26, 1870
3,977	Young, McClintock, jr., assignor to Cyrus H. and Leander J. McCormick, Frederick, Md. Harvester..... (Reissue)	May 17, 1870
3,978	Same..... Harvester-rake..... (Reissue)	May 17, 1870
3,979	Same..... Combined reel and rake for harvesters..... (Reissue)	May 17, 1870
106,446	Young, Nicholas, Parma, Mich. Quilting-frame holder.....	Aug. 16, 1870
108,549	Young, Robert Clark, assignor to Oliver Franklin Grover, Middletown, Conn. Composing-stick.....	Oct. 18, 1870
	Young, Sarah R., <i>et al.</i> (See Porter, Alonzo, assignor.)	
102,746	Young, Solomon W., Providence, R. I. Umbrella.....	May 3, 1870
102,195	Young, Solomon W., assignor through mesne assignments to Elisha Dyer, Providence, R. I. Machine for forming and cutting eyelets and in the preparation of stock for the same.....	April 19, 1870

*Alphabetical list of patentees for the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
102,644	Young, Theodore B., Louisville, Ky. Substitute for jamb-nuts .....	May 3, 1870
110,104	Young, Thomas, assignor to Ives & Allen, Montreal, Canada. Heating-stove....	Dec. 13, 1870
	Young, William. (See Bomar, Elijah, assignor.)	
107,848	Young, William, and Peter Brash, Scotland. Manufacture of illuminating-gas..	Sept. 27, 1870
	Young, William B., <i>et al.</i> (See Lane, John, assignor)..... (Two cases.)	
101,561	Young, William D., South Pittsburgh, Pa. Curling-rod for paper cigar-lighters..	April 5, 1870
99,804	Young, W. H., Chicago, Ill. Fare-box for street-cars .....	Feb. 15, 1870
104,530	Same..... Fare-box for omnibuses, &c .....	June 21, 1870
110,324	Young, William H. H., Waverly, Iowa. Automatic band-cutter, spreader, and feeder .....	Dec. 20, 1870
102,643	Youngs, Alanson, Berlin, Mich. Evaporating-apparatus .....	May 3, 1870
106,245	Youngs, Edmund, New York, N. Y. Tuyere.....	Aug. 9, 1870
99,271	Yount, George W., P. P. Reister, A. L. Keeports, and William Yount, Littles-town, Pa. Curtain-holder .....	Jan. 25, 1870
104,395	Zacharias, John F., Leesburgh, Va. Sash-holder .....	June 14, 1870
105,875	Zahn, Henry, San Francisco, Cal. Candlestick .....	July 26, 1870
101,802	Zakrzewsha, Wilhelmina Julianna, Prussia. Rocker for chairs .....	April 12, 1870
109,792	Zantzing, Augustus, assignor to William P. McDowell, Louisville, Ky. Hand-stamp .....	Nov. 29, 1870
102,353	Zawadski, Alfred, assignor to self and J. C. O. Redington, Syracuse, N. Y. Bassoteno for melodeons, &c .....	April 26, 1870
	Zehfuss, Johann G., <i>et al.</i> (See Wicke, Brönnner, Petersen & Zehfuss.)	
107,432	Zeigler, Daniel, Lewistown, Pa. Mechanical movement .....	Sept. 13, 1870
103,955	Zeit, Frederick, Philadelphia, Pa. Apparatus for cooling ale, beer, &c .....	June 7, 1870
108,229	Zent, Abram L., Roanoke, Ind. Leather-cutting machine .....	Oct. 11, 1870
101,202	Ziegler, Albert F., Columbus, Ohio. Vapor-burner .....	Mar. 22, 1870
109,364	Ziegler, William, and John H. Seal, New York, N. Y. Flavoring-compound .....	Nov. 15, 1870
100,833	Ziesing, August G., Weehawken, N. J. Lock for ships' pumps .....	Mar. 15, 1870
103,815	Zimmerman, Eli, Pamela Four Corners, N. Y. Horse hay-rake .....	May 31, 1870
110,413	Zimmerman, Jackson C., Thomaston, Ga. Chair .....	Dec. 20, 1870
99,272	Zimmerman, John, Owatonna, Minn. Spiral-current water-wheel .....	Jan. 25, 1870
106,018	Zimmermann, Carl Friedrich, Philadelphia, Pa. Accordeon .....	Aug. 2, 1870
109,097	Zink, Anthony, Lancaster, Ohio. Self-acting wagon-brake .....	Nov. 8, 1870
	Zink, C., <i>et al.</i> (See Heist, John, assignor.)	
108,550	Zinsser, August, New York, N. Y. Treating shellac .....	Oct. 18, 1870
109,990	Zinsser, William, New York, N. Y. Compound for treating malt liquors .....	Dec. 6, 1870
99,515	Zitzman, E. H., assignor to Albert A. Freeman, Philadelphia, Pa. Railway-brake shoe .....	Feb. 1, 1870
109,567	Zoerberlein, John, Baltimore, Md. Carriage-attachment for plows .....	Nov. 22, 1870
	Zoiner, Paul W., and Conrad Harris. (See Harris & Zoiner.)	
	Same..... same..... (Design.)	
4,123	Zook, Daniel M., and H. Klingman. (See Phillips, David, assignor.)	
	Zuckermann, Jacob, San Francisco, Cal. Motive-power for sewing and other machines..... (Reissue) .....	Sept. 13, 1870
99,742	Zwiebel, Anton, Burlington, Wis. Universal joint .....	Feb. 8, 1870

## LIST OF TRADE-MARKS REGISTERED DURING THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date of filing.	Date of registration.
	Alexander & White. ( <i>See White &amp; Alexander.</i> )		
17	American Tube Works, Boston, Mass. Seamless metal tubes.....	Oct. 11, 1870	Nov. 1, 1870
61	Appleby & Helme, New York, N. Y. Snuff.....	Oct. 24, 1870	Nov. 15, 1870
71	Atlantic White-Lead Company, New York, N. Y. White-lead.....	Nov. 3, 1870	Nov. 22, 1870
72	Same.....Refined boiled linseed-oil.....	Nov. 3, 1870	Nov. 22, 1870
1	Averill Chemical-Paint Company, New York, N. Y. Liquid paint..	Aug. 29, 1870	Oct. 23, 1870
96	Badger, Benjamin F., Everett, Mass. Razor-straps.....	Nov. 26, 1870	Dec. 13, 1870
	Baldwin & Pope. ( <i>See Pope &amp; Baldwin.</i> )		
2	Baldy, J. B., & Co., Toledo, Ohio. Mustard.....	Aug. 27, 1870	Oct. 25, 1870
18	Bartlett, Henry A., & Co., Philadelphia, Pa. Stove-blackening.....	Sept. 21, 1870	Nov. 1, 1870
112	Block, H., & Co., Cincinnati, Ohio. Whisky.....	Dec. 9, 1870	Dec. 27, 1870
83	Boetticher, Kellogg & Co., Evansville, Ind. Ax.....	Nov. 14, 1870	Dec. 6, 1870
66	Bowen, Hunt & Winslow, Chicago, Ill. Black alpaca dress-goods..	Nov. 4, 1870	Nov. 22, 1870
3	Branson, Ellis, Philadelphia, Pa. Retail coal.....	Aug. 11, 1870	Oct. 25, 1870
53	Brooklyn White-Lead Company, New York, N. Y. White-lead.....	Oct. 22, 1870	Nov. 8, 1870
54	Same.....same.....	Oct. 22, 1870	Nov. 8, 1870
55	Same.....same.....	Oct. 22, 1870	Nov. 8, 1870
97	Brown, D. Arthur, & Co., Fishersville, N. H. Wagon-axle.....	Nov. 26, 1870	Dec. 13, 1870
13	Buffalo Magic-Polishing Company, The, Buffalo, N. Y. Polishing-preparation.....	Sept. 15, 1870	Oct. 25, 1870
	Clark and Wattson. ( <i>See Wattson &amp; Clark.</i> )		
4	Coit, Tracy, New York, N. Y. Fish.....	Sept. 28, 1870	Oct. 25, 1870
12	Dale, Ross & Co., Philadelphia, Pa. * Dry-goods.....	Aug. 3, 1870	Oct. 25, 1870
113	Danforth, George M., New York, N. Y. Burning-fluid.....	Nov. 29, 1870	Dec. 27, 1870
67	Danforth, Roderick F., Cleveland, Ohio. Non-explosive burning-fluid.....	Aug. 5, 1870	Nov. 22, 1870
84	Daves, Fiske & Fanning, New York, N. Y. Umbrellas and parasols.	Nov. 5, 1870	Dec. 6, 1870
85	Deniker & Melville, New York, N. Y. Toilet-soap.....	Nov. 11, 1870	Dec. 6, 1870
114	Des Auges, Robert, New York, N. Y. Honolulu orange-bitters.....	Dec. 12, 1870	Dec. 27, 1870
115	Dugdale & Girvin, Baltimore, Md. Fertilizer.....	Nov. 10, 1870	Dec. 27, 1870
116	Same.....same.....	Nov. 10, 1870	Dec. 27, 1870
5	Ellis, William Lanfair, & Co., Baltimore, Md. Oyster-packing.....	Oct. 1, 1870	Oct. 25, 1870
86	English, Richard W., Buffalo, N. Y. Brooms.....	Oct. 29, 1870	Dec. 6, 1870
87	Same.....same.....	Nov. 18, 1870	Dec. 6, 1870
88	Same.....same.....	Nov. 18, 1870	Dec. 6, 1870
6	Evans, Clow, Dalzell & Co., Pittsburgh, Pa. Wrought-iron pipe.....	Sept. 12, 1870	Oct. 25, 1870
19	Faber, Eberhard, New York, N. Y. Lead-pencils.....	Aug. 8, 1870	Nov. 1, 1870
117	Same.....same.....	Dec. 5, 1870	Dec. 27, 1870
118	Fisk, Clark & Flagg, New York, N. Y. Furnishing-goods.....	Dec. 3, 1870	Dec. 27, 1870
98	Flint & Co., Providence, R. I. Root and herb bitters.....	Nov. 28, 1870	Dec. 13, 1870
20	Foote, Arthur W., Brooklyn, N. Y. Manufactured tobacco.....	Aug. 13, 1870	Nov. 1, 1870
89	Friberg & Workum, Cincinnati, Ohio. Whisky.....	Aug. 27, 1870	Dec. 6, 1870
99	Furber, George C., Yreka, Cal. Medical compound.....	Oct. 18, 1870	Dec. 13, 1870
101	Gaines, W. A., & Co., Frankfort, Ky. Whisky.....	Nov. 26, 1870	Dec. 13, 1870
102	Same.....same.....	Nov. 26, 1870	Dec. 13, 1870
103	Same.....same.....	Nov. 26, 1870	Dec. 13, 1870
104	Same.....same.....	Nov. 26, 1870	Dec. 13, 1870
100	Gardiner, L. Y., & Co., Amsterdam, N. Y. Brooms and brushes.....	Nov. 22, 1870	Dec. 13, 1870
7	Garrett, W. E., & Sons, Philadelphia, Pa. Snuff.....	Aug. 26, 1870	Oct. 25, 1870
	Girvin & Dugdale. ( <i>See Dugdale &amp; Girvin.</i> ) (Two cases.)		
21	Green, Richard, Manchester, N. H. Preparations for the hair.....	Sept. 8, 1870	Nov. 1, 1870
8	Hamilton, William G., New York, N. Y. Car-wheel.....	Oct. 1, 1870	Oct. 25, 1870
	Hardy, Milton J., and Charles P. Moorman. ( <i>See Moorman &amp; Hardy.</i> )		
78	Hathaway, C. L., & Sons, Boston, Mass. Leather-dressing.....	Nov. 5, 1870	Nov. 29, 1870
	Helme & Appleby. ( <i>See Appleby &amp; Helme.</i> )		
22	Hirsch, David, & Co., New York, N. Y. Cigars.....	Oct. 14, 1870	Nov. 1, 1870
23	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
24	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
25	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
26	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
27	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
28	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
29	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
30	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
31	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
32	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
33	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
34	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
35	Same.....same.....	Oct. 14, 1870	Nov. 1, 1870
36	Hirsh, Henry, and Seligman Oppenheimer, New York, N. Y. Watches.....	Sept. 7, 1870	Nov. 1, 1870
	Hite & Teter. ( <i>See Teter &amp; Hite.</i> )		

*List of trade-marks registered during the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date of filing.	Date of registration.
79	Hoffheimer Brothers, Cincinnati, Ohio. Whisky.....	Nov. 5, 1870	Nov. 29, 1870
9	Hogg, John K., Frederick, Md. Soap.....	Aug. 17, 1870	Oct. 25, 1870
37	Holmes, Henry J., Atlanta, Ga. Cotton-seed.....	Oct. 10, 1870	Nov. 1, 1870
56	Houghton, Edwin F., Philadelphia, Pa. Cosmoline, a product of petroleum.....	Sept. 9, 1870	Nov. 8, 1870
38	Hughes, David W., Palmyra, Mo. Corn-planters.....	Sept. 21, 1870	Nov. 1, 1870
39	Jackson, James A., & Co., St. Louis, Mo. Stomach-bitters.....	Sept. 1, 1870	Nov. 1, 1870
40	Johnson, Frank G., New York, N. Y. School-charts.....	Oct. 1, 1870	Nov. 1, 1870
57	King, William, Springfield, Ohio. Table-sauce.....	Oct. 21, 1870	Nov. 8, 1870
41	Lippiatt Silver-Plate and Engraving Company, New York, N. Y. Silver and plated ware.....	Aug. 30, 1870	Nov. 1, 1870
68	Lynch, J. Augustus, & Co., Boston, Mass. The Huntoon steam-governors.....	Nov. 4, 1870	Nov. 22, 1870
62	Maddox, William, Ripley, Ohio. Cough-balsam.....	Oct. 31, 1870	Nov. 15, 1870
58	Martin, J. Lloyd, Baltimore, Md. Preparation for the hair.....	Oct. 20, 1870	Nov. 8, 1870
69	McDermott, A., Oroville, Cal., and Redington, Hostetter & Co., San Francisco, Cal. Yreba santa.....	Oct. 29, 1870	Nov. 22, 1870
42	McKinnon, John A., Selma, Ala. Medical compound.....	Sept. 22, 1870	Nov. 1, 1870
	Melville & Deniker. (See Deniker & Melville.)		
43	Meyer, Julius W., St. Louis, Mo. Axes.....	Sept. 17, 1870	Nov. 1, 1870
63	Moorman, C. P., Louisville, Ky. Whisky.....	Nov. 4, 1870	Nov. 15, 1870
64	Moorman, Charles P., Louisville, Ky., and Milton J. Hardy, New York, N. Y. Whisky.....	Nov. 4, 1870	Nov. 15, 1870
90	Moorman, C. P., & Co., Louisville, Ky. Whisky.....	Nov. 17, 1870	Dec. 6, 1870
44	Myers, Elkanah, & Co., Cincinnati. Prize-candy.....	Sept. 22, 1870	Nov. 1, 1870
10	Olzendam, Abraham P., Manchester, N. H. Woolen hose.....	Aug. 15, 1870	Oct. 25, 1870
	Oppenheimer, Seligman, and Henry Hirsh. (See Hirsh & Oppenheimer.)		
105	Page, George F. and Charles T., Franklin, N. H. Leather.....	Nov. 23, 1870	Dec. 13, 1870
106	Palmer, Lorin, New York, N. Y. Cigars, snuff, and tobacco.....	Oct. 8, 1870	Dec. 13, 1870
65	Partridge, John C., & Co., Chicago, Ill. Cigars, tobacco, and snuff.....	Oct. 10, 1870	Nov. 15, 1870
73	Patent-Metal Company, Philadelphia, Pa. Metal.....	Nov. 3, 1870	Nov. 22, 1870
46	Peck & Snyder, New York, N. Y. Base-balls.....	Aug. 30, 1870	Nov. 1, 1870
91	Pope & Baldwin, Quincy, Ill. Corn-planter.....	Nov. 18, 1870	Dec. 6, 1870
107	Pratt, Charles, New York, N. Y. Oils.....	Nov. 25, 1870	Dec. 13, 1870
109	Prescott, James L., North Berwick, Me. Stove-polish.....	Sept. 19, 1870	Dec. 20, 1870
110	Randolph, Reune R., New York, N. Y. Tobacco.....	Nov. 9, 1870	Dec. 20, 1870
45	Rasin, R. W. L., Baltimore, Md. Soluble sea-island guano.....	Oct. 15, 1870	Nov. 1, 1870
92	Rawson & Philbrick, Key West, Florida. Cigar.....	Nov. 15, 1870	Dec. 6, 1870
	Redington, Hostetter & Co., and A. McDermott. (See McDermott & Redington, Hostetter & Co.)		
93	Ridenour, Coblentz & Co., Springfield, Ohio. Liniment.....	Nov. 16, 1870	Dec. 6, 1870
108	Roberts, Robert J., New York, N. Y. Cutlery.....	Nov. 26, 1870	Dec. 13, 1870
80	Roose, William S., Washington, D. C. Cigar.....	Nov. 8, 1870	Nov. 29, 1870
81	Same..... same.....	Nov. 8, 1870	Nov. 29, 1870
119	Ross, Charles H., & Co., Baltimore, Md. Liquors.....	Dec. 7, 1870	Dec. 27, 1870
11	Ryan, William, Dubuque, Iowa. Hams.....	Oct. 10, 1870	Oct. 25, 1870
120	Seely, Samuel S., Bath, N. Y. Medical compound.....	Dec. 7, 1870	Dec. 27, 1870
94	Smith, James T., New York, N. Y. Umbrellas and parasols.....	Nov. 22, 1870	Dec. 6, 1870
70	Smith, Jesse S., Waverly, N. Y. Detergent powder.....	Oct. 23, 1870	Nov. 22, 1870
	Snyder & Peck. (See Peck & Snyder.)		
47	Teter & Hite, Moffett's Creek, Va. All-healing liniment and morn-ing-star lamp-oil.....	Sept. 29, 1870	Nov. 1, 1870
95	Thompson & Steele, Chicago, Ill. Baking-powder.....	Nov. 10, 1870	Dec. 6, 1870
14	Thurber, H. K., & Co., New York, N. Y. Yeast-powder.....	Oct. 1, 1870	Oct. 25, 1870
15	Same..... Whisky.....	Oct. 1, 1870	Oct. 25, 1870
111	Tappan, Charles, Wakefield, Mass., and Moses F. Winn, Woburn, Mass. Water-proof goods.....	Nov. 5, 1870	Dec. 20, 1870
16	Turner, J. J., & Co., Baltimore, Md. Fertilizing-compound.....	July 23, 1870	Oct. 25, 1870
82	Underwood, William, & Co., Boston, Mass. Deviled entremets.....	Oct. 25, 1870	Nov. 29, 1870
74	United States Proprietary Medicine Company, Cincinnati, Ohio. Medical compound.....	Nov. 2, 1870	Nov. 22, 1870
49	Victor Scale Company, Dixon, Ill. Scales.....	Oct. 7, 1870	Nov. 1, 1870
75	Walton, Whann & Co., Wilmington, Del. Fertilizer.....	Nov. 3, 1870	Nov. 22, 1870
59	Warfield, Alexander, Philadelphia, Pa. Soap.....	Oct. 26, 1870	Nov. 8, 1870
50	Wattles, Joseph Warren, Canton, Mass. Suspenders and elastic webbing.....	Sept. 19, 1870	Nov. 1, 1870
60	Wattson & Clark, Philadelphia, Pa. Super-phosphate.....	Oct. 22, 1870	Nov. 8, 1870
51	Weed Sewing-Machine Company, Hartford, Conn. Sewing-machines.....	Aug. 15, 1870	Nov. 1, 1870
121	Weisenberger, Philip, Pittsburgh, Pa. Burning-fluid.....	Dec. 12, 1870	Dec. 27, 1870
76	Wells, William N., Boston, Mass. Medicines.....	Oct. 26, 1870	Nov. 22, 1870
48	West Virginia Oil and Oil-Land Company, The, Petroleum, W. Va. Lubricating-oils.....	Sept. 23, 1870	Nov. 1, 1870
77	White & Alexander, Paris, Ky. Whisky.....	Sept. 23, 1870	Nov. 22, 1870
	Winn, Moses F., and Charles Toppan. (See Toppan & Winn.)		
52	Zeilin, J. H., & Co., Macon, Ga. Medicine.....	Aug. 5, 1870	Nov. 1, 1870



## LIST OF PATENTS EXTENDED DURING THE YEAR 1870.

No.	Name, residence, and invention or discovery.	Date.
2,290	Andrews, Emanuel, Williamsport, Pa. Machine for grinding saws. (Reissued June 19, 1866).....	Dec. 16, 1856
18,888	Apperly, James, and William Clissold, England. Machinery for preparing fibrous substances for spinning. (Patented in England Dec. 4, 1856).....	Dec. 22, 1857
15,549	Averill, Levi, Elmira, N. Y. Lime-kiln.....	Aug. 19, 1856
14,044	Avery, Benjamin F., Louisville, Ky. Plow.....	Jan. 8, 1856
2,125	Bachelder, John, Norwich, Conn. Sewing-machine. (Reissued Dec. 12, 1865; extended seven years, and again extended by act of Congress approved July 14, 1870).....	May 8, 1849
15,406	Bailey, Alfred, Amesbury, Mass. Pegging-jack.....	July 29, 1856
3,812	Baker, Henry N., Binghamton, N. Y. Printing-telegraph. (Reissued Jan. 25, 1870).....	April 29, 1856
4,026	Ball, Hosea, New York, N. Y. Oven. (Reissued Oct. 12, 1869, and again reissued June 14, 1870).....	Sept. 23, 1856
14,944	Ball, William, deceased, by Adelia E. and Edwin P. Ball, administrators, Chicopee, Mass. Operating steam-stamps.....	May 27, 1856
14,708	Bartle, Warren S., Newark, N. Y. Machine for sowing fertilizers.....	April 22, 1856
1,798	Barton, Jason, deceased, by Margarette L. Barton and Charles A. Buell, administrators, Chatham, Conn. Pressure-bell. (Reissued Oct. 25, 1864).....	April 8, 1856
14,221	Baxter, William, Newark, N. J. Wrench.....	Feb. 12, 1856
15,402	Boyes, Burritt C., deceased, by Sady D. Boyes, administratrix, Philadelphia, Pa. Folding-guide for sewing-machines.....	July 22, 1856
15,544	Bradford, Hezekiah, Reading, Pa. Ore-washer.....	Aug. 12, 1856
14,551	Brooks, William F., New York, N. Y. Making seamless metal tubes.....	April 1, 1856
14,490	Brown, Adolph and Felix, New York, N. Y. Machine for cutting loaf-sugar.....	Mar. 25, 1856
2,754	Brown, Charles H., and Charles Burleigh, Fitchburgh, Mass. Valve-gear for steam-engines. (Reissued Aug. 27, 1867).....	Jan. 15, 1856
16,204	Bryson, Robert, Schenectady, N. Y. Machine for husking corn.....	Dec. 9, 1856
14,272	Burleigh, Charles, Georgetown, Col. Ter. Gearing for feed-rollers of planing-machines.....	Feb. 12, 1856
978	Carr, William S., New York, N. Y. Water-closet. (Reissued June 12, 1860).....	Aug. 5, 1856
14,388	Carter, William L., Marietta, Pa. Ore-washer.....	Mar. 11, 1856
15,687	Cawood, Joseph D., deceased, by George Johnson, administrator, Marshall, Mich. Repairing railway-bars.....	Sept. 9, 1856
4,079	Chambers, Cyrus, jr., Philadelphia, Pa. Paper-folding machine. (Reissued July 26, 1870).....	Oct. 7, 1856
14,086	Clark, H. M., deceased, by William S. Booth, administrator, New Britain, Conn. Machine for heading bolts.....	Jan. 15, 1856
14,950	Clemson, William, Middletown, N. Y. Grinding circular saws.....	May 27, 1856
15,222	Clough, William T., Newark, N. J. Concentrating-apparatus for sulphuric acid.....	July 1, 1856
3,687	Crosby, C. O., New Haven, Conn. Machine for folding paper. (Reissued Oct. 26, 1869).....	Dec. 23, 1856
16,306	Dawley, Benjamin G., North Providence, R. I. Looms.....	Dec. 23, 1856
15,054	Dodge, Daniel, Keeseville, N. Y. Nail-machine.....	June 3, 1856
15,718	Dole, L. A., deceased, by Richard H. Garrigues, administrator, Salem, Ohio. Saw-gumner.....	Sept. 9, 1856
2,982	Dorsey, Owen, Newark, Ohio. Harvester-rake. (Reissued Oct. 23, 1860, and again reissued June 9, 1868).....	Mar. 4, 1856
15,176	Dunham, Isaac A., North Bridgewater, Mass. Shoemakers' edge-plane.....	June 24, 1856
14,951	Eames, Charles T., Milford, Mass. Boot-tree.....	May 27, 1856
15,880	Estep, David P., Pittsburgh, Pa. Making ax-polls.....	Oct. 14, 1856
15,226	Fay, Samuel B., New York, N. Y. Metallic hook for labels.....	July 1, 1856
15,228	French, Arasmus, New Haven, Conn., and Charles Frost, Waterbury, Conn. Making boxes of paper-pulp.....	July 1, 1856
14,158	Gold, Stephen J., West Cornwall, Conn. Apparatus for heating buildings by steam.....	Jan. 29, 1856
16,308	Goodell, Joseph H., Logansport, Ind. Machine for cutting veneers from the log.....	Dec. 23, 1856
16,144	Grosvenor, Jonathan P., Lowell, Mass. Method of clamping cutters in cutter-heads for planing-machines.....	Dec. 2, 1856
15,358	Grover, Oliver F., Middletown, Conn. Printers' composing-stick.....	July 15, 1856
14,914	Hedley, Edward, Philadelphia, Pa. Shingle-machine.....	May 20, 1856
14,844	Hill, George W., Olean, N. Y. Saw-mill dog.....	May 6, 1856
3,893	Hoe, Richard M., New York, N. Y. Printing-press. (Reissued Mar. 22, 1870).....	Aug. 5, 1856
2,597	Horsford, E. N., Cambridge, Mass. Pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes. Reissued May 7, 1867).....	April 22, 1856
1,828	Hunt, Walter, deceased, by Polly and George W. Hunt, administrators, New York, N. Y. Shirt-collar. (Reissued Nov. 29, 1864; extended under act of Congress approved March 15, 1870).....	July 25, 1854
15,978	Ingham, Harvey B., Camptown, Pa. Smut-machine.....	Oct. 28, 1856
15,077	Ives, James, Mount Carmel, Conn. Mode of attaching pads to saddle-trees.....	June 10, 1856
15,610	Jones, J. Herva, Rockford, Ill. Hand seed-planter.....	Aug. 26, 1856
2,332	Kindleberger, Tobias J., Eaton, Ohio. Cider-mill. (Reissued Aug. 14, 1866; extended under act of Congress approved April 6, 1870).....	May 29, 1855
16,278	Kingsland, Joseph, jr., Franklin, N. J. Paper-pulp engine.....	Dec. 23, 1856

*List of patents extended during the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
1,380	Kingsland, Joseph, jr., Franklin, N. J. Machine for grinding paper-pulp. (Reissued June 28, 1859, and again reissued Jan. 6, 1863)	Dec. 16, 1856
1,381	Same..... Process of grinding paper-pulp. (Reissued June 28, 1859, and again reissued Jan. 6, 1863)	Dec. 16, 1856
15,768	Lamson, Daniel, deceased, by Emily J. Lamson, executrix, Weymouth, Mass. Machine for notching hoops	Sept. 23, 1856
15,854	Lewis, William, Brooklyn, N. Y., and William H. Lewis, New York, N. Y. Plate-holder for photographic cameras	Oct. 7, 1856
2,944	Louis, Lafayette, deceased, by El Dora Louis, administratrix, New York, N. Y. Melodeon. (Reissued Feb. 26, 1867, and again reissued May 26, 1868)	Nov. 18, 1856
14,510	Lyman, Azel S., New York, N. Y. Method of cooling and ventilating rooms, &c	Mar. 25, 1856
1,355	Magee, John, Chelsea, Mass. Ventilating-damper for stoves. (Reissued Nov. 18, 1862)	May 20, 1856
15,044	Mann, Jacob J., deceased, by William C. Martin, administrator, and Henry F. Mann, Pittsburgh, Pa. Reaping-machines	June 3, 1856
15,141	Maynard, Edward, Washington, D. C. Cartridge	June 17, 1856
15,142	McComb, David, deceased, by Mary Ann McComb, administratrix, Memphis, Tenn. Non-elastic band for bales of cotton and other fibrous materials	June 17, 1856
14,923	Miller, James M., assignor through mesne assignments to D. D. Foley, Washington, D. C. Surface-condenser for steam-engines. (Act of Congress)	May 20, 1856
14,985	Miner, Henry, and Henry M. Stevens; and William H. Saunders, deceased, by Mary Saunders, executrix, New York, N. Y. Coupling for vehicles	May 27, 1856
367	Moen, Augustus R., deceased, by Sophia A. and Philip L. Moen, administrators, New York, N. Y. Mode of constructing walls and floors of cellars. (Reissued April 8, 1856)	Feb. 26, 1856
830	Morrill, Samuel, Andover, N. H. Clothes-drier. (Reissued Sept. 27, 1859)	Nov. 11, 1856
1,312	Morris, John C., Cincinnati, Ohio. Wood-bending machine. (Reissued May 27, 1862)	Mar. 11, 1856
15,491	Munson, David, Indianapolis, Ind. Lightning-rod	Aug. 5, 1856
14,064	Musgrave, Hiram B., Cincinnati, Ohio. Gas-cooking stove	Jan. 8, 1856
16,248	Nelson, Thomas, Troy, N. Y. Machinery for weaving shade-cord	Dec. 16, 1856
16,214	Neville, John, Brooklyn, N. Y. Making cast steel	Dec. 9, 1856
15,492	Park, Sidney W., Albany, N. Y., and Edgar S. Ells, Fremont, N. Y. Rotary knitting-machines	Aug. 5, 1856
15,666	Parker, Edward, Plymouth, Conn. Buckle for wearing-apparel	Sept. 2, 1856
14,827	Powers, Thomas H., Milwaukee, Wis. Furnace for smelting iron	May 6, 1856
1,893	Pratt, Randal, deceased, by Mary G. Pratt, administratrix, Maple Township, Pa. Horse hay-rake. (Reissued Feb. 23, 1865)	Jan. 8, 1856
1,894	Same..... same..... (Reissued Feb. 23, 1865)	Jan. 8, 1856
1,895	Same..... same..... (Reissued Feb. 23, 1865)	Jan. 8, 1856
16,286	Pusey, Lea, deceased, by Samuel G. Lewis, executor, Philadelphia, Pa. Arrangement of railroad platform-scales	Dec. 23, 1856
16,186	Putnam, Silas S., Neponset, Mass. Machine for forging iron	Dec. 9, 1856
3,272	Quantin, Alphonse, deceased, by Jane Quantin and Henry A. Pintard, administrators, Philadelphia, Pa. Method of bottling fluids under gaseous pressure. (Reissued Oct. 27, 1868, and again reissued Jan. 19, 1869)	Mar. 4, 1856
3,502	Roberts, Cyrus, Three Rivers, Mich., and John Cox, New Hope, Pa. Grain-separator. (Reissued June 15, 1869)	Mar. 25, 1856
15,778	Rogers, Ethan, Cleveland, Ohio. Hydraulic brick-press	Sept. 23, 1856
14,836	Selpho, William, New York, N. Y. Construction of artificial legs	May 6, 1856
78	Seymour, Frederick J., Wolcottville, Conn. Making brass kettles. (Reissued May 14, 1861)	May 13, 1856
16,864	Simpson, Michael H., Boston, Mass. Machinery for combing wool. (Antedated Sept. 17, 1856)	Mar. 17, 1857
15,021	Spooner, Lysander, Boston, Mass. Elastic bottom for chairs and other articles	June 3, 1856
3,303	Squire, John J., De Soto, Mo. Horse-rake. (Reissued Feb. 16, 1869)	Dec. 23, 1856
14,700	Stearns, E. H., Erie, Pa. Head and tail block for saw-mills	April 15, 1856
2,445	Storm, William Mont, New York, N. Y. Breech-loading fire-arm. (Reissued Jan. 1, 1867)	July 8, 1856
2,446	Same..... Breech-loading fire-arm. (Reissued Jan. 1, 1867)	July 8, 1856
14,933	Taggart, John, Boston, Mass. Excavating-scoop	May 20, 1856
15,827	Thomas, Samuel, Hokendauqua, Pa. Ore-washer	Sept. 30, 1856
2,569	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
2,570	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
2,571	Thompson, George, Philadelphia, Pa. Manufacture of caustic alkali. (Reissued Feb. 1, 1859, and again reissued April 16, 1867)	Oct. 21, 1856
14,260	Thompson, Thomas, deceased, by John Thompson, executor, New York, N. Y. Machine for folding paper, &c	Feb. 12, 1856
15,201	Thompson, William H., Boston, Mass., and Eustis P. Morgan, Biddeford, Me. Safety-hatch for warehouses. (Improvement added April 14, 1857)	June 24, 1856
16,128	Todd, George C., Lynn, Mass. Edge-key for making and polishing the edges of boot and shoe soles	Nov. 25, 1856
130	Tuttle, Edward A., Brooklyn, N. Y. Register and ventilator. (Reissued Nov. 12, 1861)	June 10, 1856
10,221	Twining, Alexander C., New Haven, Conn. Manufacturing ice. (Antedated July 3, 1850; extended 7 years, and again extended by act of Congress)	Nov. 8, 1853
14,814	Tyer, Henry G., Andover, Mass., and John Helm, New Brunswick, N. J. Making gum-elastic cloth. (Antedated Jan. 9, 1856)	May 6, 1856
3,015	Tyler, John, West Lebanon, N. H. Water-wheel. (Reissued June 30, 1863)	July 8, 1856

*List of patents extended during the year 1870—Continued.*

No.	Name, residence, and invention or discovery.	Date.
3,361	Voelter, Henry, Germany. Reducing wood-fiber to paper-pulp. (Antedated Aug. 29, 1856; reissued April 6, 1869).....	Aug. 10, 1858
15,862	Walworth, Caleb C., Boston, Mass. Vise .....	Oct. 7, 1856
14,529	Washburn, A. W., Yazoo City, Miss. Cotton-seed planter.....	Mar. 25, 1856
15,446	Waymoth, A. D., Fitchburgh, Mass. Machine for manufacturing spools.....	July 29, 1856
3,058	Whiteley, Edward, Cambridge, Mass. Culinary boiler. (Reissued July 28, 1868)	April 8, 1856
1,614	Whiteley, William N., Springfield, Ohio. Harvesting-machine. (Reissued June 25, 1861, and again reissued Feb. 2, 1864).....	Nov. 25, 1856
1,615	Whiteley, William N., Springfield, Ohio. Harvesting-machine. (Reissued June 28, 1861, and again reissued Feb. 2, 1864).....	Nov. 25, 1856
2,202	Woodman, Horace, Saco, Me. Machinery for cleaning top-flats of carding-engines. (Reissued March 13, 1866).....	July 8, 1856
16,160	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch .....	Dec. 2, 1856
1,439	Woodruff, Theodore T., Philadelphia, Pa. Railway-car seat and couch. (Reissued March 17, 1863).....	Dec. 2, 1856
16,254	Wright, Wendell, Bloomfield, N. J. Mode of securing springs in upholstery .....	Dec. 16, 1856
14,333	Wyche, William E., Brookville, N. C. Cultivating-plow.....	Feb. 26, 1856

## ALPHABETICAL LIST OF INVENTIONS.

Invention or discovery.	Name of patentee.	No.
A.		
Abdominal and back supporter and truss, Combined..	R. J. Cundiff.....	103, 992
Abutment for bridges, Metallic.....	A. Wheelock.....	99, 989
Accordeon.....	C. F. Zimmerman.....	106, 018
Acetic acid, Process of obtaining from wood.....	T. Schwartz.....	101, 319
Acetic acid, Purifying.....	T. L. Olden.....	100, 553
Acid, citric, Manufacture of.....	W. R. Johnston.....	103, 340
Acid, residuum from oil-refineries, Process of treating.	A. Farrar.....	100, 876
Acid, sulphurous, Apparatus for producing.....	M. Hatschek.....	101, 011
Adding and subtracting register.....	H. A. House.....	109, 619
Adding-machine.....	E. A. Swain.....	98, 720
Adding-machine.....	H. Parmelee.....	99, 226
Adding-machine.....	G. W. Chapin.....	99, 533
Adding-machine.....	J. Groesbeck.....	100, 288
Adding-machine.....	N. Ockerlund.....	105, 717
Adding-machine.....	F. T. Leilich.....	106, 701
Adding-machine.....	C. E. Spear.....	106, 881
Adding-machine.....	G. W. Chapin.....	106, 999
Adding-machine.....	F. F. Warner.....	110, 520
Addressing-machine.....	J. McPatrick.....	108, 038
Adjustable attachment of pump-barrels to their bases.	J. W. Douglas.....	98, 674
Adjustable bearings for water-wheel shafts.....	W. Bayley.....	101, 083
Adjusting-slide for chains.....	R. J. Pond.....	101, 503
Adjustment of mercurial pressure-gauge.....	M. E. Campfield.....	102, 464
Adjustment of wheels on the axles of railway-cars....	R. Eaton.....	99, 418
Advertising-apparatus.....	W. Hebdon.....	109, 208
Advertising-frame, Extensible.....	D. G. Howell.....	99, 675
Adz, Stone.....	W. Covart.....	107, 227
Ageing spirits.....	A. Caldwell.....	107, 658
Ageing whisky and other spirits, Apparatus for.....	J. P. Greely.....	109, 611
Air and gas, Apparatus for carbureting.....	J. B. Hyde.....	107, 262
Air and gas, Apparatus for carbureting.....	H. A. Chapin.....	108, 005
Air and gases, Apparatus for carbureting.....	A. Bartholf.....	108, 432
Air and gases in fat-rendering, bone-boiling, &c., De- odorizing the.	A. and E. Lister and C. J. Eames.....	109, 638
Air and liquids, Cooling.....	D. E. Somes.....	101, 392
Air, Apparatus for carbureting.....	J. H. Van Houten.....	109, 562
Air, Apparatus for carbureting.....	J. D. Spang.....	109, 148
Air, Apparatus for carbureting.....	J. F. Spence and L. D. Towsley.....	99, 274
Air, Apparatus for carbureting.....	R. H. Plass.....	104, 642
Air, Apparatus for carbureting.....	A. E. Dupas and A. Barbarin.....	104, 716
Air, Apparatus for carbureting.....	J. F. Spence.....	105, 994
Air, Apparatus for carbureting.....	H. Oertel.....	107, 403
Air, Apparatus for supplying.....	H. W. Adams.....	110, 414
Air, Carbureting.....	C. Lawrence.....	100, 534
Air-compressing apparatus.....	B. T. Babbitt.....	103, 121
Air-compressing apparatus, Hydraulic.....	M. Hey.....	102, 397
Air-compressing apparatus, Hydraulic.....	W. D. Seal.....	104, 362
Air-heater and steam-condenser, Compound.....	B. F. Sturtevant.....	100, 240
Air-heater and steam-condenser, Compound.....	B. F. Sturtevant.....	100, 241
Air-heater and steam-condenser, Compound.....	B. F. Sturtevant.....	100, 242
Air, Machine for cooling, and for manufacture of ice..	J. Kraffert.....	110, 573
Air-pistol.....	R. Brooks, jr.....	99, 754
Air-pump.....	J. W. Hopkins.....	99, 193
Air-pump.....	J. F. Haskins.....	109, 732
Air-wheel for gas-carbureters, Rotary.....	J. F. Spence.....	107, 635
Alarm-attachment.....	J. H. Thorp.....	109, 971
Alarm-attachment for clocks.....	J. H. Davis.....	110, 016
Alarm-attachment for locks and bolts.....	C. E. Pierce.....	104, 195
Alarm, Burglar.....	H. Green.....	98, 489
Alarm, Burglar.....	R. Shaler.....	100, 933
Alarm, Burglar.....	W. Reynolds.....	105, 369
Alarm, Burglar.....	E. T. Clegg.....	109, 588
Alarm, Burglar.....	J. H. Thorp.....	109, 970
Alarm, Burglar.....	M. J. Hunt.....	110, 043
Alarm, burglar, Electro-magnetic.....	W. B. Guernsey.....	108, 257
Alarm, burglar, Electro-magnetic.....	J. M. Dille.....	109, 723
Alarm, Electro-magnetic.....	T. S. Hall.....	105, 447
Alarm for safes.....	W. Spear.....	104, 073
Alarm for steam-boiler, low-water, Electro-magnetic..	W. Duryea.....	106, 141
Alarm-gong, Electro-magnetic.....	C. Williams, jr., and J. Redding.....	108, 743
Alarm-gun.....	C. J. Beasley.....	100, 106
Alarm, High and low water.....	G. N. Jones.....	105, 461
Alarm, Hotel and burglar.....	C. S. Noe.....	100, 792
Alarm-lock for money-drawer.....	G. Kimball.....	108, 363
Alarm, Low-water and high-pressure.....	G. B. Massey.....	106, 598

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Alarm, Nautical .....	J. F. Haskins .....	110, 036
Alarm, Pocket .....	C. W. Simonds .....	109, 952
Alarm, railroad, Electro-magnetic .....	E. H. Pursell .....	107, 101
Alarm, railroad-switch, Electro-magnetic .....	T. A. B. Putnam .....	99, 233
Alarm, Telegraph signal-box .....	J. Abbott .....	103, 117
Alarm ticket-nippers for coupon-tickets .....	I. Hyde .....	105, 459
Alarm, Till .....	A. D. Hoffman .....	100, 037
Alarm, Till .....	E. Reed .....	102, 864
Alarm, Till .....	J. F. Baldwin .....	103, 124
Alarm, Time .....	C. and W. H. Tucker .....	110, 092
Albumen, Manufacture of .....	T. H. Smith .....	103, 251
Albumen, Preparation of .....	G. Bourgade .....	107, 158
Album, Photographic .....	G. Bourgade .....	106, 112
Alcohol and other liquids, Cold cap-still for the distillation of .....	J. E. Tapley .....	106, 232
Alcohol and spirits, Purifying .....	J. B. Mason .....	103, 064
Alcoholic liquors, Apparatus for rectifying .....	C. C. Parsons .....	104, 343
Alcoholic liquors, Apparatus for rectifying .....	C. L. Fleischman .....	103, 320
Alcoholic liquors from grain, Fermenting .....	C. L. Fleischman .....	106, 530
Alcoholic spirits, Rectifying and improving .....	J. Ellingwood .....	108, 773
Ale and beer casks, Composition for lining .....	D. Werthen .....	107, 645
Ale and beer, Cooling .....	J. Werner .....	99, 124
Ale, beer, &c., Apparatus for cooling .....	M. Reynolds .....	102, 041
Alkali, caustic, Packing .....	F. Zeitz .....	103, 955
Alley-board for ball-game .....	W. H. Balmain .....	102, 207
Alloy, Metallic, to imitate the precious metals .....	C. Robinson .....	107, 545
Alloys of manganese, Manufacture of .....	L. Sibert .....	100, 937
Altitude-instrument .....	E. Savage .....	102, 324
Alto-relievo figures, Process for making molds for casting of .....	H. Colby .....	100, 119
Alum and fertilizers from mineral phosphates, Manufacture of .....	N. Heintzelman .....	103, 879
Amalgamator .....	P. Spence .....	110, 084
Amalgamator .....	J. C. Brewster .....	99, 630
Amalgamator and ore-concentrator .....	C. W. Stevenson .....	102, 177
Amalgam for filling teeth, Composition .....	J. Scott .....	103, 377
Anchor .....	L. A. Plumb .....	104, 879
Anchor .....	G. C. Pattison .....	102, 583
Anchor .....	G. C. Pattison .....	102, 584
Anchor-beam support for brick walls .....	A. H. Law .....	103, 205
Anchor for securing cores in molds .....	W. W. Goodrich .....	109, 405
Aniline, Production of colors for dyes, inks, &c., from .....	Z. Ellis .....	98, 676
Animal and vegetable substances, Apparatus for extracting oil from .....	R. Pinkney .....	106, 616
Animal fibers from vegetable, Separating .....	H. A. Stearns .....	103, 519
Animal-shearing machine .....	J. Stuart .....	107, 833
Animals, Instrument for dosing .....	B. T. Smith, J. K. Priest, and W. Earl .....	104, 222
Animals, Stall for feeding .....	O. Barker .....	100, 967
Animal-tether .....	S. H. Shaw .....	102, 874
Annunciator .....	J. W. Upson .....	104, 667
Annunciator, Electro-magnetic .....	J. Capron .....	110, 547
Anti-freezing device for pumps .....	W. N. McInnis .....	101, 372
Anti-friction gearing .....	J. G. Hanning .....	103, 325
Antimony, Electrotyping with .....	T. Chase .....	105, 426
Anvil-last .....	J. S. Howard .....	100, 038
Apparatus for drying and pressing lard-scrap .....	D. Bainbridge .....	108, 231
Apparatus for frizzling cloth .....	A. K. Howe .....	108, 788
Apple corer and slicer .....	S. M. Moschcowitz .....	99, 782
Apple corer and quarterer .....	R. J. Dodd .....	101, 838
Apple parer, corer, and slicer .....	B. J. McFeely .....	107, 794
Apple parer, cutter, and corer .....	J. Shobe .....	109, 350
Apple-paring machine .....	G. W. Bennett .....	103, 284
Apples, Drying and preserving .....	W. Robb, 2d .....	109, 454
Apples for the manufacture of cider, Machine for preparing .....	M. P. Smith .....	109, 068
Approach-gate .....	G. B. Hamlin .....	106, 359
Arch girders, Tubular .....	S. H. Cole .....	106, 330
Argand gas-burner .....	D. Hammond and J. Abbott .....	102, 393
Argand lamp-burner, Wick-adjuster for .....	J. B. Fuller .....	105, 795
Argand oil-burner .....	W. B. Curtiss .....	103, 993
Argillaceous limestones, Treating, to obtain hydraulic cement .....	G. K. Osborn .....	104, 635
Arms for working slide-valves, Adjustable .....	F. Coignet .....	99, 637
Arm-support for keyed instruments .....	H. Hendrickson .....	107, 492
Arsenic sulphurets, Process of extracting silver and gold from .....	L. Buchberger .....	109, 582
Articles of compressed wood, Manufacture of .....	C. M. T. Du Molay .....	103, 433
Articles of glass, Manufacture of .....	S. P. Wheeler .....	101, 552
Articulator, Dental .....	C. A. Moore .....	109, 646
Ashlars, Cutting .....	G. F. Shaffer .....	99, 598
	W. Boulton .....	105, 633



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Asphaltic composition for pavements, roads, &c., Manufacture of.	A. Ruttkay .....	107, 815
Aspirator for preventing overheating of grain, &c.....	T. A. Hoffman .....	100, 628
Atomizer, Steam .....	I. P. Leele .....	108, 710
Attaching standing-rigging to masts, Apparatus for.....	J. Nute .....	107, 093
Attachment for hot-air registers .....	O. A. Ebert .....	99, 864
Attachment for lamp-burners .....	W. Westlake .....	101, 066
Attachment for lamp-chimneys .....	J. Hughes .....	99, 901
Attachment to paper-machines to prevent the straining and breaking of the paper.	L. Dean .....	106, 134
Attachment to ships' compass, Electro-magnetic .....	A. Foucault .....	105, 562
Auger .....	R. H. Hopkins .....	104, 457
Auger-bit .....	A. L. Andrews .....	104, 404
Auger-bits, Machine for bending the lips of .....	J. Swan .....	100, 816
Auger, Earth .....	S. Pope .....	101, 160
Auger for boring square holes .....	A. T. Perrine .....	100, 440
Auger-handle .....	W. A. Ives .....	108, 267
Auger, Hollow .....	J. H. Van Wie .....	105, 744
Auger, Hollow .....	C. S. Bonney .....	105, 896
Auger, Hollow .....	A. F. Cushman .....	106, 919
Auger, Post .....	H. C. Partridge and J. Preston .....	99, 227
Augers, earth-boring, Coupling for .....	T. Orchard .....	109, 930
Auger stop-cocks, Self-closing .....	A. Weed .....	100, 697
Auger, Well .....	J. Wilson and G. H. Baisly .....	105, 021
Automatic heat-regulator for hot-air furnaces .....	A. H. Tingley .....	99, 972
Awl .....	S. Babbitt .....	105, 161
Awl, Grafting .....	D. B. Oliver .....	109, 442
Awning .....	L. G. Sert and C. L. Schurr .....	108, 639
Awning .....	W. Hildebrand .....	109, 007
Awning, Adjustable .....	L. Yenne .....	107, 584
Awning and fan for horses' heads .....	H. L. Byrd .....	107, 333
Awning for cars, &c.....	J. H. Monce .....	105, 829
Awning for horses .....	W. McCormick .....	109, 532
Awning-frame .....	H. Hilliard .....	105, 076
Awning-frame .....	C. Werner .....	109, 694
Awning-frame, Adjustable .....	L. Yenne .....	102, 642
awnings, Device for operating .....	A. Thalhofer .....	104, 900
Ax and hook combined .....	P. W. Norris .....	99, 784
Axes, Manufacturing .....	H. D. Morris .....	98, 789
Axle and axle-yoke, Carriage .....	S. Rowell .....	109, 842
Axle-box .....	J. J. Lahayo and J. Eastburn .....	105, 026
Axle-box .....	D. Dalzell .....	106, 469
Axle-box, Carriage .....	A. E. Smith .....	99, 607
Axle-boxes, Core for casting .....	W. H. Hawley .....	106, 265
Axle-boxes, Lubricating .....	T. S. Speakman .....	101, 923
Axle-box for carriage .....	A. G. Baker and G. M. Ennis .....	98, 543
Axle-box for carriages .....	D. Jewett .....	102, 127
Axle-box for carriages .....	G. B. Durkee .....	103, 161
Axle-box for carriages .....	L. R. Dye .....	107, 170
Axle-box, Railway .....	J. Wardrobe, C. D. B. Fisk, J. F. Curtis, and G. Fetley .....	110, 093
Axle-box, Railway-car .....	J. T. Hagerty .....	99, 882
Axle-box, Railway-car .....	G. F. Lynch .....	108, 277
Axle, Carriage .....	D. Dalzell .....	98, 473
Axle, Carriage .....	W. A. Lewis .....	100, 646
Axle, Carriage .....	W. A. Clark .....	101, 097
Axle, Carriage .....	G. A. Lloyd .....	101, 379
Axle, Carriage .....	F. Scherb .....	101, 521
Axle, Carriage .....	L. Littlejohn .....	103, 960
Axle, Carriage .....	A. E. Smith .....	105, 266
Axle, Carriage .....	M. R. Freeman .....	105, 793
Axle, Carriage .....	W. N. Hall .....	105, 801
Axle, Carriage .....	A. E. Smith .....	107, 112
Axle, Carriage .....	H. Killam .....	107, 783
Axle, carriage, Anti-friction .....	A. Alcott .....	101, 205
Axle-clips, Dies for trimming and straightening .....	E. H. Plant .....	105, 535
Axle for carriages .....	A. E. Smith .....	109, 621
Axle for vehicles .....	D. Dalzell .....	106, 470
Axle for vehicles .....	A. J. Straight .....	106, 969
Axle for wheat-drills .....	J. F. Fisher .....	101, 991
Axle, Lubricating .....	M. F. Kellog .....	101, 885
Axle-nut .....	E. A. Stanley .....	102, 876
Axle-nut and axle .....	C. Thomas .....	104, 901
Axle-nuts, Method of manufacturing .....	S. Vanstone .....	104, 904
Axle, Railroad-car .....	L. E. Truesdell .....	101, 187
Axle, Railway-car .....	F. Hudner .....	99, 195
Axle, Railway-car .....	C. Cole .....	100, 860
Axle, Railway-car .....	F. Sturneyk .....	106, 635
Axle, Railway-car .....	C. Hyatt .....	108, 789
Axles and their boxing .....	R. R. McGregor .....	102, 025
Axles, Anti-friction boxes for .....	W. O. Reid .....	110, 160

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Axles, Apparatus for fitting and setting.....	J. Cunningham .....	109, 115
Axle, Self-lubricating.....	G. P. Blaisdell .....	110, 002
Axle-skein.....	L. Mayhew .....	110, 579
Axles, Mode of lubricating.....	E. Sawyer .....	101, 384
Axles or journals, Mode of preventing the heating.....	E. D. Murfey.....	109, 237
Axles, Securing hubs to.....	G. E. Clow .....	107, 452
Axle-trees, Machine for turning .....	W. H. Heffley .....	106, 364
Axle, Wagon.....	T. M. Cluxton .....	101, 586
Axle, Wagon.....	C. W. Filmore and T. M. Jones .....	104, 005
Axle, Wagon.....	W. A. Lewis .....	108, 607
Axle, Wagon.....	W. A. Lewis .....	108, 608
Axle, Wagon.....	W. A. Lewis .....	108, 609
<b>B.</b>		
Baby-jumper.....	E. L. Warner.....	105, 149
Back-band for harness-saddles, Revolving.....	G. Elbel .....	103, 588
Back-lash for mill-gearing.....	J. L. Post .....	108, 515
Bag-fastener.....	S. C. Dix .....	101, 837
Bag-filler for fanning-mill.....	J. C. Gephart .....	104, 937
Baggage-check.....	G. F. Newcomb .....	104, 339
Bag-holder.....	J. M. Burke .....	98, 553
Bag-holder.....	L. Crofoot .....	100, 123
Bag-holder.....	G. D. Sweigert.....	102, 616
Bag-holder.....	D. S. Wing .....	109, 788
Bag-holder.....	A. D. Swogger .....	110, 511
Bag-holder.....	E. Boynton .....	104, 698
Bags, paper, Machine for folding.....	C. J. Moffatt .....	101, 299
Bag-string fastener.....	E. B. Southwick.....	98, 527
Bail-ear.....	W. D. Mason and A. T. Rice.....	101, 483
Bait-mill for fishermen.....	S. Hamblin .....	101, 260
Balance.....	W. S. How .....	106, 163
Balance.....	G. W. King .....	107, 182
Balancing millstone.....	C. V. Foreman .....	107, 029
Balls or mandrels, Machine for turning .....	W. Newsham.....	100, 654
Bandages, Suspensory.....	J. L. Taylor.....	101, 941
Band cutter, spreader, and feeder, Automatic.....	W. H. H. Youngs.....	110, 324
Band, elastic, Clasp for.....	A. Scheydecker.....	107, 550
Bank-notes, bonds, revenue-stamps, &c.....	G. W. Casilear.....	99, 757
Bar for plow-beam blanks, Rolled.....	G. W. Jope and W. Bunton.....	110, 371
Barge, Coal.....	J. A. Preston .....	103, 502
Barge, Coal.....	R. Hartley.....	103, 607
Bark-extracts, Apparatus for evaporating and concentrating.....	T. W. Johnson and A. W. Goodell.....	108, 793
Bark-rosser and breaker.....	G. S. Tillinghast and J. W. Burdwin.....	110, 403
Bark-shaving machine.....	M. Winger .....	108, 668
Barley-fork.....	F. Dunn .....	100, 382
Barn-door hanger.....	W. R. Axe.....	100, 351
Barrel.....	T. Hanvey .....	110, 232
Barrel.....	H. Willard .....	101, 956
Barrel.....	H. Willard .....	102, 346
Barrel.....	H. Willard .....	102, 347
Barrel.....	H. G. Porter .....	102, 432
Barrel.....	H. Willard .....	103, 000
Barrel.....	E. H. Cady .....	103, 298
Barrel.....	P. H. Griswold.....	105, 565
Barrel.....	G. M. Huntly.....	106, 827
Barrel.....	J. W. Weston.....	110, 096
Barrel chamfering and crozing machine.....	T. M. Annis and T. B. Luce .....	110, 106
Barrel-filler.....	F. Stitzel .....	109, 071
Barrel-filler.....	S. C. Catlin .....	110, 201
Barrel-filler, Automatic.....	S. C. Catlin .....	99, 159
Barrel-head.....	R. De Bare .....	107, 885
Barrel-heads, Charring.....	J. D. Copenhaver .....	107, 339
Barrel-heads, Machine for making .....	A. Cutter .....	108, 115
Barrel-heads, Machinery for cutting.....	P. Chase .....	98, 666
Barrel-heads, Machinery for making .....	W. Mickel.....	103, 762
Barrel, Machine for setting up.....	A. Cutter .....	108, 113
Barrel, pulverizing, Self-discharging .....	A. B. Paul.....	102, 857
Barrels and casks, Apparatus for agitating and cooling during the process of pitching.....	D. Cammerer.....	104, 421
Barrels and packages, Construction of.....	C. Green.....	100, 286
Barrels, Apparatus for pitching.....	R. Rosochacki .....	101, 166
Barrels, Apparatus for pitching.....	L. Schulze.....	106, 964
Barrels, Apparatus for pitching.....	J. W. Brady.....	110, 193
Barrels, Apparatus for pitching.....	A. A. C. Klaucke.....	110, 373
Barrels, Apparatus for setting up.....	W. B. Elliott.....	101, 242
Barrels, casks, &c., Apparatus for pitching and coating.....	L. Schulze.....	109, 948
Barrels, Lock for securing stamps upon.....	J. L. Harley.....	107, 176
Barrels, Machine for beveling and crozing .....	H. A. Crossley.....	103, 303
Barrels, Machine for crozing.....	H. Nelson.....	101, 650

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Barrels, Machine for filling.....	J. L. Stewart.....	109, 151
Barrels, Machine for trussing.....	P. Welch.....	109, 854
Barrels, Machine for washing.....	T. Reynolds.....	103, 371
Barrels, Self-acting tilts for.....	I. Hudson and W. Minshall.....	107, 779
Barrel-staves, Machine for jointing.....	J. B. Bell.....	93, 735
Barrel-staves, Machine for jointing.....	H. A. Crossley.....	99, 411
Barrels, Tightening-strap for.....	L. Macferran.....	110, 255
Barrel-tiller.....	G. Armstrong.....	103, 540
Barrow and turnip-drill, Combined.....	A. M. Newland.....	139, 041
Bars, metal, Method of rolling.....	J. Horner.....	104, 957
Bars of metal, Machine for straightening.....	E. R. Cheney.....	102, 916
Base for summer-piece and grate-frame.....	A. Brown and W. Patterson.....	99, 631
Base-knob and door-fastener, Combined.....	H. H. Heskett and M. E. Ferguson.....	99, 086
Basin with waste-pipe attachments.....	G. Miller and J. H. Coates.....	100, 782
Basket, Clothes.....	L. and A. C. Carman.....	107, 446
Basket for tile-grinders.....	P. C. Reniers.....	110, 072
Basket, Fruit.....	L. Carpenter.....	102, 488
Basket, Fruit.....	E. Colby.....	103, 570
Basket, Fruit.....	R. Mitchell.....	106, 605
Basket, Fruit.....	S. D. Payne.....	106, 719
Baskets, Machine for cutting material for.....	L. H. Bridgeman.....	107, 654
Basket-stuff, Machine for cutting.....	C. Jordan.....	101, 021
Batch for glass, Machine for mixing.....	W. T. Gellinder.....	110, 029
Bath, immersion and steam, Combined.....	J. W. Caldwell.....	110, 545
Bathing-apparatus.....	W. T. Street.....	102, 878
Bath, Portable.....	E. J. Knowlton.....	100, 297
Baths, Confluent pipes for.....	H. Jones.....	101, 884
Bath-tub, Combination.....	A. C. Brownell.....	103, 293
Batteries for electrotyping.....	P. S. Hoe.....	99, 192
Battery, Electric.....	T. Chutaux.....	105, 042
Battery, Electric.....	T. Chutaux.....	105, 043
Battery, Galvanic.....	J. Hill.....	103, 331
Battery, Galvanic.....	E. D. McCracken.....	106, 383
Battery, Galvanic.....	J. Kidder.....	108, 602
Battery, Galvanic.....	D. McF. Cook.....	110, 206
Battery, Stamp.....	G. D. Crocker.....	108, 570
Battery, Thermo-electric.....	M. G. Farmer.....	109, 603
Bayonet.....	A. Mills.....	101, 297
Beading-machines for sheet-metal.....	C. H. Raymond.....	99, 788
Beam, Metallic.....	L. Holms.....	101, 015
Beams, Pile for.....	J. Stokes.....	109, 850
Bearing and packing material.....	E. D. Murfey.....	110, 583
Bearing for rudder-heads.....	R. C. Sturges.....	98, 719
Bearing for the table-rolls of Fourdrinier paper-machines.	G. S. Barton.....	101, 345
Bearings and journals, Material for.....	E. D. Murfey.....	109, 239
Bearings and packings, Material for.....	E. D. Murfey.....	110, 582
Bearings, Composition for.....	E. D. Murfey.....	108, 931
Bearings, Composition for coating.....	P. J. Kelley.....	109, 018
Beating and cleaning hair, Machine for.....	G. P. Holloway and W. J. Huey.....	109, 903
Bed and bed-bottom.....	W. C. Peters and W. A. Le Row.....	108, 622
Bed-bottom.....	J. Potter.....	98, 520
Bed-bottom.....	W. R. Briggs.....	99, 056
Bed-bottom.....	L. A. Clippinger and S. S. Pratt.....	99, 636
Bed-bottom.....	W. Bowen.....	100, 491
Bed-bottom.....	W. W. Wait.....	100, 569
Bed-bottom.....	J. Sperry.....	101, 326
Bed-bottom.....	M. Morehouse.....	101, 376
Bed-bottom.....	J. N. Newell.....	103, 226
Bed-bottom.....	E. Hopkins.....	104, 310
Bed-bottom.....	V. Bell.....	105, 028
Bed-bottom.....	L. L. Newman.....	106, 074
Bed-bottom.....	A. W. Cramer.....	106, 666
Bed-bottom.....	G. Richardson.....	106, 726
Bed-bottom.....	O. S. Osgood.....	106, 954
Bed-bottom.....	D. Hoskins.....	107, 261
Bed-bottom.....	B. Gregg.....	108, 018
Bed-bottom.....	E. L. Bushnell.....	108, 447
Bed-bottom.....	S. B. Freeman.....	108, 470
Bed-bottom.....	C. Valkmar.....	109, 852
Bed-bottom, Spring.....	A. H. Ceiley.....	99, 058
Bed-bottom, Spring.....	C. H. Dunks.....	99, 765
Bed-bottom, Spring.....	J. L. Secomb.....	99, 790
Bed-bottom, Spring.....	J. B. Campbell.....	100, 256
Bed-bottom, Spring.....	B. F. Ells.....	100, 385
Bed-bottom, Spring.....	T. Howe.....	100, 408
Bed-bottom, Spring.....	T. W. Johnston.....	100, 635
Bed-bottom, Spring.....	W. Wells.....	100, 698
Bed-bottom, Spring.....	G. W. Loomis.....	101, 029
Bed-bottom, Spring.....	D. N. Sellig.....	101, 526
Bed-bottom, Spring.....	M. Faloon.....	101, 600

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Bed-bottom, Spring.....	J. N. Bull.....	102, 089
Bed-bottom, Spring.....	R. Tattershall.....	102, 182
Bed-bottom, Spring.....	W. S. Crippen.....	102, 231
Bed-bottom, Spring.....	M. and L. Van Vleck.....	102, 337
Bed-bottom, Spring.....	J. F. Duffy and W. P. Frailey.....	103, 030
Bed-bottom, Spring.....	G. O. Capen.....	103, 138
Bed-bottom, Spring.....	C. I. Skow.....	103, 249
Bed-bottom, Spring.....	D. C. Bronson.....	103, 425
Bed-bottom, Spring.....	C. S. Stevens.....	103, 521
Bed-bottom, Spring.....	O. Blake.....	103, 548
Bed-bottom, Spring.....	C. W. Mutell.....	103, 646
Bed-bottom, Spring.....	G. B. Richmond.....	103, 658
Bed-bottom, Spring.....	W. McArthur.....	104, 048
Bed-bottom, Spring.....	D. A. Scott.....	104, 504
Bed-bottom, Spring.....	W. W. Bartlett.....	104, 533
Bed-bottom, Spring.....	L. Cutler.....	104, 929
Bed-bottom, Spring.....	M. Cahill.....	105, 036
Bed-bottom, Spring.....	S. M. Brooks.....	106, 028
Bed-bottom, Spring.....	M. V. B. Shepard.....	105, 853
Bed-bottom, Spring.....	C. T. Baade.....	106, 316
Bed-bottom, Spring.....	H. D. W. Bailey.....	107, 213
Bed-bottom, Spring.....	A. H. Fatzinger.....	107, 348
Bed-bottom, Spring.....	P. Stovall.....	108, 650
Bed-bottom, Spring.....	T. A. Carl.....	108, 966
Bed-bottom, Spring.....	H. Ingraham.....	109, 413
Bed-bottom, Spring.....	J. F. Peck.....	109, 445
Bed-bottom, Spring.....	C. Glenn.....	109, 889
Bed-bottom, Spring.....	J. H. Quackenbush.....	110, 284
Bed-bottom, Spring.....	W. B. Judson.....	110, 471
Bed-bottoms, Spring for.....	J. H. Potts.....	101, 161
Bed, Buggy-top.....	A. Morrell.....	103, 846
Bed, Inclosed folding-spring.....	L. Derome.....	98, 932
Bed, Extension.....	F. Menzer.....	101, 489
Bed-frame.....	S. Springer.....	101, 327
Bed-plate for rag or paper engines.....	A. Hankey.....	101, 008
Bed-plate for saw-mills.....	A. J. Croft.....	102, 392
Bed-rail fastener.....	J. Lemman.....	107, 618
Bed, Sofa.....	J. Needham.....	100, 789
Bed, Sofa.....	F. C. Payne.....	102, 702
Bed, Spring.....	H. W. and G. F. Ladd.....	99, 770
Bed, Spring.....	L. Hull.....	101, 267
Bed, Spring.....	L. Andersen.....	107, 995
Beds, sofas, &c., Spring for.....	J. Sears.....	110, 293
Bedstead.....	H. H. Everts.....	100, 133
Bedstead.....	W. Q. Hall.....	104, 143
Bedstead.....	J. C. Merritt.....	104, 182
Bedstead.....	H. B. Ramsey.....	108, 729
Bedstead, Adjustable.....	W. O. Reid.....	100, 314
Bedstead and cot.....	V. L. Baker.....	105, 885
Bedstead and cot.....	H. W. Ladd.....	107, 509
Bedstead and lounge.....	R. Jewell.....	101, 882
Bedstead and table.....	G. Wilson.....	107, 580
Bedstead, Cabinet.....	A. J. Roberts.....	105, 850
Bedstead, Camp.....	C. J. Everickx.....	100, 386
Bedstead, Camp.....	A. D. McCoy.....	110, 485
Bedstead, Extension.....	F. Menzger.....	99, 455
Bedstead-fastener.....	H. Swineford.....	99, 030
Bedstead-fastener.....	A. B. Sheaffer.....	103, 511
Bedstead-fastening.....	C. H. Fessenden.....	100, 993
Bedstead-fastening.....	J. C. Turner.....	104, 082
Bedstead-fastening.....	J. Benjamin.....	105, 771
Bedstead-fastening.....	A. Grillet.....	105, 798
Bedstead-fastening.....	P. Maulding and J. U. Fraley.....	106, 382
Bedstead-fastening.....	W. H. Carter.....	106, 997
Bedstead-fastening.....	J. H. Waite.....	107, 131
Bedstead-fastening.....	C. D. Purdy.....	107, 812
Bedstead-fastening.....	E. F. Gilbert.....	108, 472
Bedstead-fastening.....	E. Mets and W. B. Geddes.....	109, 538
Bedstead, Folding.....	W. H. Bull.....	99, 755
Bedstead, Folding.....	T. G. Clifford.....	99, 847
Bedstead, Folding.....	J. C. Hall and A. C. Richards.....	105, 069
Bedstead, Folding.....	M. Crosby.....	108, 457
Bedstead, Invalid.....	A. J. Russell.....	104, 774
Bedstead-joint.....	L. G. Bradford.....	109, 799
Bedstead, Parlor.....	M. Crosby.....	107, 881
Bedstead, Sofa.....	W. Farson.....	98, 858
Bedstead, Sofa.....	M. Sulzbacher.....	100, 464
Bedstead, Sofa.....	J. C. Butler.....	102, 769
Bedsteads, Spiral-spring for.....	W. L. Beardsley.....	109, 573
Bedsteads, tables, &c., Fastener for.....	J. M. Baird.....	102, 473
Bedstead-tester.....	F. Layaux.....	106, 842

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Bedstead, Wardrobe	J. F. Dodge	105, 556
Bedstead, Wardrobe	S. S. Burr	106, 776
Bee-feeder	C. C. Van Deusen	105, 144
Bee-hive	S. D. Barber and J. Wolf	98, 544
Bee-hive	J. Montgomery	98, 612
Bee-hive	J. Gould	93, 761
Bee-hive	J. M. Youart	99, 994
Bee-hive	H. B. Cooper	100, 015
Bee-hive	H. Grems	100, 524
Bee-hive	J. M. Price	101, 039
Bee-hive	M. Morton	101, 647
Bee-hive	C. Finn	102, 526
Bee-hive	W. Courtney	102, 917
Bee-hive	T. A. Frakes	103, 106
Bee-hive	J. W. Winder	103, 637
Bee-hive	H. F. Carpenter	103, 978
Bee-hive	T. H. Forster	104, 011
Bee-hive	N. F. White	104, 521
Bee-hive	D. S. Burget	105, 037
Bee-hive	V. Leonard	106, 377
Bee-hive	E. Davis	107, 012
Bee-hive	H. F. Rohm	107, 548
Bee-hive	H. F. Rohm	107, 628
Bee-hive	J. L. Smith	107, 732
Bee-hive	J. Leffel and E. Harrison	107, 792
Bee-hive	C. Embrey	108, 244
Bee-hive	E. B. Turpinseed	108, 536
Bee-hive	E. J. Donavan	108, 893
Bee-hive	J. Behe	108, 960
Bee-hive	J. A. Douglass	108, 984
Bee-hive	G. O. Gabrion	108, 997
Bee-hive	L. L. Goodwin	109, 201
Bee-hive	G. T. Wheeler	109, 477
Bee-hive	U. A. Springer	109, 557
Bee-hive	W. A. Ruth	109, 672
Bee-hive	J. W. Gladding	109, 838
Bee-hive	R. A. Williams	109, 986
Bee-hive	R. Arnold	110, 332
Bee-house	J. W. Wood	109, 792
Bee-protector	J. Cory	104, 832
Beer, ale, &c., on draught, Preserving and delivering, by means of carbonic acid gas.	T. Ahrens	106, 019
Beer and ale on draught, Preserving	C. E. Haynes	109, 126
Beer and other barrels, Apparatus for pitching	H. Reutti and P. Winkehaus	102, 156
Beer and other liquids, Apparatus for cooling	T. Grundmann	100, 752
Beer, Apparatus for cooling	W. Gee	106, 686
Beer, Apparatus for elevating	A. H. Ladner and T. F. Fenlin	104, 742
Beer, Apparatus for preserving	C. Pohlmann	103, 498
Beer-cooler, Portable	E. C. Bundy	100, 852
Beer, water, and other liquids, Apparatus for cooling and purifying.	J. P. Gruber	100, 027
Beer-worts, Method of cooling	O. P. Lewis	108, 606
Bell	J. Kintz	102, 016
Bell, Alarm and other	T. and G. A. Pemberton	102, 034
Bell, Door	W. Allport	101, 659
Bell, Door	E. H. Goldman and D. W. Hisey	103, 446
Bell, Door and alarm	G. O. Lackey	108, 708
Bell for clocks	L. C. Butch	103, 559
Bell-pull	J. J. C. Smith	99, 020
Bell, Sleigh	W. E. Barton	104, 630
Bells, sleigh, Mode of attaching	W. E. Barton	105, 412
Bells, wire, Machine for making	R. W. Norton	106, 951
Bellows, Blacksmiths'	J. F. Cory and H. C. Webb	103, 720
Bellows, Smiths'	G. H. Peck	102, 704
Belt-awl	F. I. Palmer	101, 655
Belt-fastener	S. S. Bolton	109, 798
Belt-gearing	G. B. Hamlin	108, 259
Belt-guide	C. P. Leavitt	106, 179
Belting-machine	J. G. Street	102, 447
Belt-replacer	W. C. Bridges	101, 978
Belts and pulleys, Compound to increase the friction between.	L. F. Robertson	104, 356
Belt-shifter	W. E. Leighton	101, 745
Belt-shifter	J. E. Mutchler	108, 379
Belt-shipping mechanism for spinning-jacks	J. Barron	100, 842
Belt-splice point-finishing	J. C. McLaren	110, 060
Belt-tightening	M. C. Chamberlin and A. Clawson	99, 634
Belt-tightener	A. N. Woodard	102, 074
Bench, Laundry	A. H. Spencer	99, 608
Bench-pin	H. Gabelmann	102, 802



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Bending and gluing the cases of grand pianos, Former for.	D. Decker .....	105, 049
Bending and upsetting tire, Apparatus for .....	J. T. Woodward .....	104, 527
Bending-machine .....	H. Winter .....	102, 641
Bending-machine .....	J. J. H. Sercombe .....	102, 975
Bending-machine, Sheet-metal .....	C. C. Hare .....	102, 001
Benzole, &c., Treating coal-products to obtain .....	J. Rowley .....	101, 048
Berth, Sleeping-car .....	W. B. Snow .....	103, 097
Bessemer steel, Apparatus for the manufacture of .....	A. L. Holley .....	106, 162
Bessemer steel, Reworking .....	C. Motier .....	102, 960
Bessemer steel, Treating .....	J. Myers, jr. ....	110, 469
Bevels on the tenons of spokes, Machine for cutting .....	A. F. Gue .....	104, 532
Bevel, square, rule, &c., Combined .....	J. D. Otstot .....	105, 121
Beverage, Medicinal .....	L. F. Lastreto .....	101, 027
Beverage or "champagne mead" .....	A. S. Taylor .....	106, 428
Beverages for medicinal and other purposes, Manufacture of .....	E. N. Hosford .....	104, 311
Bias-cutter .....	J. H. Goodfellow .....	107, 248
Bib-cock .....	J. H. Davis .....	99, 649
Billiard-cue .....	M. V. Ingersoll .....	106, 166
Billiard-cushion, India-rubber .....	C. L. Richards .....	101, 163
Binding for textile fabrics, Metallic .....	J. Twamley .....	108, 067
Bird-cage .....	G. F. J. Colburn .....	98, 562
Bird-cage .....	G. F. J. Colburn .....	99, 164
Bird-cage .....	T. H. Bradley .....	104, 699
Bird-cage .....	T. H. Bradley .....	105, 164
Bird-cage .....	G. R. Osborn .....	107, 802
Bird-house .....	H. Miller .....	102, 573
Biscuit, Manufacture of .....	C. D. Ross and C. D. Ross, jr. ....	108, 097
Bit, Boring .....	D. Kelley .....	102, 829
Bit, Brace .....	H. S. Shepardson .....	100, 458
Bit, Bridle .....	W. P. Letchworth .....	102, 838
Bit, Bridle .....	J. A. Swan .....	103, 103
Bit, Bridle .....	M. J. Firey .....	104, 133
Bit, Bridle .....	M. J. Firey .....	104, 134
Bit, Bridle .....	H. C. Thompson .....	104, 793
Bit, Bridle .....	B. F. Wheeler .....	105, 282
Bit, Bridle .....	M. Foreacre .....	106, 044
Bit, Bridle .....	F. B. Kalkbrenner .....	108, 795
Bit for harness .....	B. S. Roberts .....	109, 145
Bits, Machine for grinding and polishing .....	J. Swan .....	99, 970
Bit-stock .....	R. S. Hildreth .....	99, 317
Bit-stock .....	D. P. Foster .....	101, 251
Bit-stock .....	H. S. Bartholomew .....	103, 281
Bit-stock .....	I. Holliday .....	103, 462
Bit-stock .....	C. H. Clark .....	105, 906
Bit-stock .....	C. P. Whitman .....	106, 754
Bitters, Medical .....	T. Beck .....	110, 423
Bitters, Stomach .....	D. Rinkle .....	101, 042
Black-balls for boot and shoe makers .....	G. A. Knowlton .....	99, 915
Blackboards, &c., Liquid slating for forming .....	W. M. Dudley .....	106, 923
Blacking, Manufacture of .....	J. L. Lucas .....	108, 271
Blades of pocket-cutlery, Manufacture of .....	W. H. and G. W. Miller .....	106, 073
Blank for hammer-strap for wagons .....	W. J. Lewis .....	107, 931
Blank for saw-teeth .....	J. E. Emerson .....	103, 990
Blast-furnaces, Producing castings direct from .....	J. W. Middleton .....	108, 375
Blasting-fuse, Electric .....	C. and I. S. Browne .....	103, 324
Blasting, Tamping-plugs for .....	E. Gomez .....	102, 250
Bleaching and cleaning vegetable fibers, Process of .....	E. T. Rice .....	100, 071
Bleaching and refining oils, Method of .....	O. Loew .....	101, 284
Bleaching dark soap and "foots" .....	O. Loew .....	101, 283
Bleaching dark soap and "foots" .....	O. Loew .....	104, 470
Blind .....	W. E. Brock .....	100, 593
Blind-fastener .....	C. E. Struck .....	103, 795
Blind-fastener .....	F. and F. Babcock .....	107, 210
Blind-rods, Machine for trimming .....	B. C. Davis .....	103, 848
Blind, screen, and shutter .....	B. J. Williams .....	102, 900
Blinds for harness-bridles .....	J. L. Brown .....	108, 440
Blind-slat .....	M. W. Clark .....	100, 118
Blind-slat machine .....	F. Leclere .....	99, 327
Blind-slat operator .....	J. B. Smith, S. A. Greely, and A. Campaigne .....	107, 557
Blind-slats, Machine for cutting .....	J. W. Helder .....	106, 694
Blind-slat tenoning-machine .....	F. Douglas .....	107, 671
Block for carpet-printing .....	T. Crossley .....	106, 468
Blocks for wood-pavements, Machine for grooving .....	P. D. Cummings .....	110, 440
Block, Sheave .....	T. H. Rice .....	106, 507
Blood, Treating, for the preparation of fertilizers and for other purposes .....	H. A. Hogel .....	100, 629
Blotter, Rotary .....	F. W. Frost and S. L. Hayward .....	101, 852
Blotting-pad .....	J. F. French .....	105, 563

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Blotting-pad .....	G. C. Hinman .....	106, 696
Blower .....	B. F. Sturtevant .....	102, 062
Blower .....	J. N. Gilchrist .....	103, 733
Blower .....	D. D. Hardy and E. E. Wood .....	104, 585
Blower .....	W. S. Colwell .....	107, 665
Blower and exhauster, Steam .....	J. Howarth .....	100, 294
Blower, Compound .....	A. K. Rider .....	101, 516
Blower, Fan .....	J. Ericsson .....	105, 348
Blower for blacksmiths' forgo .....	J. G. Tscheulin .....	102, 626
Blower, Hot-air .....	B. F. Sturtevant .....	100, 238
Blower, Pressure .....	B. F. Sturtevant .....	100, 239
Blower, Pressure .....	J. Perrault .....	102, 964
Blower, Rotary .....	H. C. McIlwain and A. Brunmfiel .....	103, 482
Blower, Rotary .....	W. G. Hyndman .....	106, 165
Blower-wheel, Pressure .....	B. F. Sturtevant .....	100, 236
Blower-wheel, Pressure .....	B. F. Sturtevant .....	100, 237
Blowing-apparatus .....	R. H. Gilbert .....	99, 876
Blowing-machine .....	J. Dougherty .....	105, 318
Blow-pipe .....	L. B. Wilson .....	101, 692
Blow-pipe .....	J. B. Hyde .....	107, 263
Blow-pipes .....	J. R. Streett .....	104, 078
Board, Implement for measuring .....	M. Tuells .....	102, 885
Boards, Apparatus for measuring .....	I. J. W. Adams .....	106, 967
Boat-detaching apparatus .....	S. L. Lord .....	99, 922
Boat-detaching apparatus .....	J. Ross .....	100, 193
Boat-detaching apparatus .....	N. C. Reynolds .....	101, 312
Boat-detaching apparatus .....	W. S. Ryerson and G. Stancliff .....	101, 665
Boat-detaching apparatus .....	W. S. Ryerson, G. Stancliff, and O. T. McIntosh .....	105, 983
Boat-detaching apparatus .....	J. Foster, Jr. .....	105, 931
Boat-detaching apparatus .....	N. M. Ray .....	106, 619
Boat-detaching apparatus .....	J. C. Cottingham .....	108, 454
Boat-detaching apparatus .....	M. V. Nobles .....	108, 507
Boat-detaching apparatus .....	J. C. Cottingham .....	110, 116
Boat, Life .....	R. Humble .....	107, 912
Boats on canals, Machine for moving .....	W. R. King .....	99, 323
Boats on canals, Propelling .....	W. F. Goodwin .....	98, 760
Bobbin .....	M. Bliss .....	103, 009
Bobbin for spinning, &c. ....	O. Pearl .....	102, 587
Bobbin-holder .....	J. Salisbury .....	99, 111
Bobbins or spools, Mode of strengthening .....	A. Hallowell .....	100, 754
Bobbin-winding machine, Thread-guide and holder for .....	W. W. Altemus .....	110, 535
Bob-sled .....	S. C. Shepard .....	102, 603
Body brace and supporter, Child's .....	L. Spigelmyer .....	101, 934
Boiler .....	M. Gore .....	103, 870
Boiler, Agricultural .....	F. Farquhar .....	102, 671
Boiler and washer .....	E. C. Brooks .....	104, 550
Boiler and washing-machine .....	D. H. Hull .....	101, 622
Boiler apparatus, Wash .....	J. Ringle .....	102, 712
Boiler, Coffee .....	E. B. Manning .....	105, 347
Boiler, Culinary .....	G. W. Bliss .....	100, 361
Boiler, Culinary .....	F. M. Carnes .....	100, 853
Boiler, Culinary .....	I. S. Bunnell .....	102, 765
Boiler, culinary, Cover of .....	P. J. and J <sup>r</sup> . Abbott .....	108, 082
Boiler, Farmers' .....	A. N. Merrill .....	98, 958
Boiler, Farmers' .....	A. N. Merrill .....	103, 639
Boiler, Farmers' .....	R. W. Thickins .....	105, 740
Boiler, Farmers' .....	J. H. Hunter .....	110, 139
Boiler-feeder .....	S. J. Parker .....	101, 762
Boiler-feeder .....	L. Foote .....	101, 992
Boiler-feeder .....	A. R. Young .....	108, 423
Boiler-feeder and low-water alarm .....	V. D. Anderson .....	103, 539
Boiler-feeder, Automatic .....	E. H. Goldman .....	100, 883
Boiler-flues, Machine for repairing .....	J. Hughes .....	106, 589
Boiler for cooking-stoves .....	F. S. Bissell .....	99, 752
Boiler for preparing paper-pulp .....	L. Dean .....	109, 595
Boiler for reducing fibrous material to textile stock .....	L. Dean .....	106, 135
Boiler for steam-heater .....	J. W. Paigo and D. Reynolds .....	103, 492
Boiler-furnace .....	J. A. T. Overend .....	102, 581
Boiler-furnace .....	T. Vicars, sr., T. Vicars, jr., and J. Smith .....	110, 313
Boiler, Kitchen .....	W. B. Scaife .....	107, 817
Boiler, Kitchen .....	W. B. Scaife .....	108, 524
Boiler-stand .....	J. L. Mott .....	99, 222
Boilers, steam, Covering for .....	C. A. Bauman .....	100, 354
Boilers, steam-pipes, &c., Non-conducting covering for .....	W. Harris .....	98, 865
Boilers, steam, Sediment-agitator for .....	B. W. Reynolds .....	109, 453
Boiler, Steam .....	D. Flynn .....	109, 195
Boiler, Steam .....	W. R. Mack .....	109, 829
Boiler, Steam .....	G. S. Dubois .....	109, 883
Boiler, Steam .....	P. Quinn .....	110, 158
Boiler, Steam .....	F. Sulter .....	110, 614

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Boiler, steam, Feed-water heater for .....	D. Whitlock .....	105, 397
Boiler, steam, Feed-water heater for .....	D. Lordon .....	107, 185
Boiler, Steam, for cooking food for stock .....	W. J. Estes .....	102, 521
Boiler, steam, Hollow grate for .....	C. E. Hudson .....	100, 631
Boiler, steam, Marine .....	T. Rimmer .....	107, 293
Boiler-tube cleaner .....	P. H. Coyle .....	102, 374
Boiler-tube cleaner .....	J. Green .....	105, 194
Boiler, Wash .....	T. Evans .....	98, 679
Boiler, Wash .....	C. D. Blinn .....	99, 753
Boiler, Wash .....	T. G. Hughes .....	100, 409
Boiler, Wash .....	B. G. Fitzhugh .....	104, 722
Boiler, Wash .....	H. Yost .....	104, 810
Boiler, Wash .....	O. F. Stedman .....	106, 516
Boiler, Wash .....	H. R. Robbins .....	106, 623
Boiler, Wash .....	J. W. and M. A. Bates .....	107, 591
Boiler, Wash .....	H. T. Woodman .....	108, 226
Boiler, Wash .....	O. F. Stedman .....	108, 944
Boiler, Wash .....	H. L. Sprague and J. N. Guyon .....	109, 774
Boiler, Washing and cooking .....	N. T. and E. J. Case .....	104, 266
Bolster for wagons .....	J. W. Pearman and J. F. C. Lutz .....	109, 243
Bolster-plate .....	T. Morgan .....	104, 628
Bolt .....	M. Harbster .....	105, 675
Bolt .....	F. G. McClelland .....	109, 640
Bolt and clip, Spring .....	J. Deeble .....	99, 413
Bolt and rivet machine .....	J. Morgan, jr .....	102, 418
Bolt and rivet trimmer .....	M. Theisen .....	104, 509
Bolt-cutter .....	W. Mendham .....	102, 026
Bolt-cutting device .....	L. Daniels .....	103, 152
Bolt, Door .....	W. H. Hart .....	103, 606
Bolt, Door .....	R. B. Prindle .....	105, 489
Bolt, Door .....	D. McArthur .....	108, 920
Bolt-fastening .....	P. Peterson .....	107, 096
Bolt feeder for mills .....	B. A. Wing .....	100, 094
Bolt for barn-doors, &c. ....	M. R. Green .....	108, 017
Bolt for doors .....	J. Levy .....	99, 330
Bolt for doors and shutters .....	G. B. Green .....	104, 449
Bolt for safe-doors .....	H. B. Tripp .....	104, 666
Bolt for safes .....	W. Sharts .....	101, 051
Bolt for safes .....	J. Farrel .....	102, 793
Bolt for safes, &c. ....	G. L. Damon .....	102, 780
Bolt for safety-stove for cars .....	C. J. Smith .....	101, 322
Bolt-heading machine .....	F. B. Prindle .....	98, 798
Bolt-holder .....	S. R. Butterfield .....	104, 264
Bolting device for safes .....	S. J. Burton .....	103, 841
Bolting-reel .....	F. B. Lewis .....	107, 512
Bolt-machine .....	J. R. Abbe .....	100, 581
Bolt, Mill .....	W. H. Berdan .....	103, 833
Bolt, Nut-lock .....	T. T. Prosser .....	103, 775
Bolt, Sash .....	J. C. Cooke .....	100, 505
Bolts, Die for heading .....	F. Brusio .....	107, 160
Bolts, Machine for heading .....	J. Root .....	100, 928
Bolts, Machine for threading .....	N. Thomas .....	99, 259
Bolts, Machine for threading .....	M. Hine .....	101, 366
Bolts, Machine for threading .....	M. Love .....	109, 433
Bolts, Machine for turning the heads of .....	W. F. Swathel .....	107, 561
Bolts, Manufacture of .....	A. Mailer .....	102, 566
Bolt, Spring-catch .....	T. McCargar .....	105, 104
Bolts, rods, &c., Tool for cutting off .....	H. Peters .....	104, 061
Bolt-threader .....	G. W. Mingus .....	103, 642
Bolt-threading machine .....	M. Hamlin .....	105, 568
Bolt-threading machine .....	M. Hamlin .....	103, 569
Bolt-work for safe-doors, &c. ....	M. Briggs .....	99, 828
Bonds, &c., Mode of preventing the stealing of .....	J. Myers, jr .....	100, 768
Bonnet, Forge .....	W. Dunkerly .....	103, 160
Book-binding .....	G. H. Reynolds .....	100, 069
Book-binding .....	J. C. Terry .....	106, 234
Book-cover protector .....	P. Van Everen .....	102, 733
Book-holder .....	E. Propst and J. F. Avés .....	106, 285
Book-holder .....	W. J. Thorn .....	107, 310
Book-marker .....	E. Cottle .....	106, 785
Book rack or stand .....	G. Gardner .....	102, 248
Book-repository .....	R. L. Dodge .....	103, 853
Book-rest .....	C. Sullivan .....	103, 682
Books, Machine for sewing .....	F. W. Howe .....	100, 407
Books, Machine for sewing .....	L. Hall .....	105, 329
Books, Safe-case for .....	S. H. Harris .....	107, 042
Boom-crotch supporter .....	H. Hopkins .....	106, 822
Boom for vessels .....	E. G. Gailac .....	99, 874
Booms of vessels, Mechanism for operating .....	J. M. Wise .....	105, 286
Boot .....	J. H. Walker .....	108, 948
Boot and shoe .....	S. Babbitt .....	99, 281

*Alphabetical list of inventions—Continued,*

Invention or discovery.	Name of patentee.	No.
Boot and shoe .....	R. A. Miller .....	102, 297
Boot and shoe .....	W. Wickersham .....	106, 013
Boot and shoe .....	A. Burko .....	106, 030
Boot and shoe, Calk for .....	J. L. Wager and A. L. Scudder .....	106, 747
Boot and shoe for horses, Combined .....	H. G. and E. M. Haedrich .....	105, 068
Boot and shoe heel .....	J. Woodley .....	101, 399
Boot and shoe heel .....	G. E. Newcomb .....	102, 961
Boot and shoe heel .....	H. F. Harris and G. P. Pinney .....	106, 814
Boot and shoe heel, Detachable .....	C. W. Bailey .....	106, 984
Boot and shoe heeling machine .....	W. F. Spinney .....	103, 792
Boot and shoe heel, Metallic .....	A. T. Perrine .....	103, 921
Boot and shoe heels .....	F. Bliesnick .....	100, 968
Boot and shoe heels, Composition for the manufacture of .....	C. Boeking .....	109, 578
Boot and shoe heels, Machine for burnishing .....	J. H. Sawyer and C. Keniston .....	101, 167
Boot and shoe heels, Mode of attaching .....	B. Giroux .....	110, 030
Boot and shoe, Moccasin .....	T. Hersey .....	107, 045
Boot and shoe shave .....	S. Packard .....	99, 466
Boot and shoe shave .....	A. B. Clark .....	100, 724
Boot and shoe sole cutter .....	E. F. Shaw .....	103, 244
Boot and shoe soles, Machine for molding, rounding, and channeling .....	W. Duckeman .....	109, 500
Boot and shoe soles, Manufacture of .....	E. Ibois .....	106, 366
Boot and shoe soles to the uppers, Machine for uniting .....	T. K. Reed .....	102, 155
Boot and shoe stiffener .....	N. J. Simonds .....	105, 501
Boot and shoe uppers, Corrugation of .....	W. Lee .....	100, 535
Boot-crimper .....	S. W. Jamison .....	104, 596
Boot-crimping machine .....	J. Rausch .....	110, 285
Boot-jack and brush .....	S. Kennedy .....	102, 014
Boot-jack and door-buffer .....	W. S. Chatham .....	110, 433
Boot, Ladies' .....	E. F. Doty .....	107, 231
Boot-laster .....	L. Barnett .....	100, 490
Boot-packs, Method of cutting .....	W. G. Slater .....	109, 065
Boot-pattern .....	E. Shopbell .....	99, 604
Boot, rubber, Ventilated .....	H. C. Cottrell .....	102, 228
Boots .....	C. H. Fitch .....	109, 122
Boots and shoes .....	L. H. Whitney .....	103, 950
Boots and shoes .....	H. H. Bigelow .....	108, 870
Boots and shoes, Apparatus for trimming the heels of .....	L. Coté .....	109, 300
Boots and shoes, Channel for .....	R. Ashe .....	104, 534
Boots and shoes, Cover for .....	W. E. Prall .....	107, 538
Boots and shoes, Heel for .....	J. Read .....	104, 200
Boots and shoes, Heel-stiffener for .....	G. V. Sheffield .....	102, 720
Boots and shoes, Inner-sole for .....	E. W. Parish .....	103, 770
Boots and shoes, Inside-sole for .....	W. E. Prall .....	107, 537
Boots and shoes, Insole for .....	P. M. Ernst .....	103, 857
Boots and shoes, Instep-stretcher for .....	M. Belding .....	104, 923
Boots and shoes, Last for .....	S. W. Shorey .....	109, 845
Boots and shoes, Machine for cutting the heels of .....	R. C. Lambert .....	108, 605
Boots and shoes, Machine for cutting soles for .....	J. H. Bean .....	108, 435
Boots and shoes, Machine for finishing heels of .....	H. H. Bigelow .....	108, 678
Boots and shoes, Machine for heeling .....	J. Gilson .....	103, 734
Boots and shoes, Machine for heeling .....	H. H. Bigelow .....	108, 677
Boots and shoes, Machine for laying channels in .....	S. D. Tripp .....	109, 077
Boots and shoes, Machine for pressing seams and cut- ting welts for .....	E. Reed .....	105, 846
Boots and shoes, Machine for rounding, channeling, and stamping soles of .....	A. Jeffers .....	99, 682
Boots and shoes, Machine for shaving heels of .....	A. B. Keith .....	104, 599
Boots and shoes, Machine for trimming the heels of .....	E. P. Richardson .....	102, 159
Boots and shoes, Manufacture of .....	L. R. Blake .....	102, 362
Boots and shoes, Manufacture of .....	W. Wickersham .....	106, 012
Boots and shoes, Manufacture of .....	W. N. Brookhouse .....	107, 864
Boots and shoes, Means of attaching the sole to .....	W. Wickersham .....	106, 010
Boots and shoes, Metallic heel for .....	E. T. Miller .....	106, 186
Boots and shoes, Metal sole for .....	J. Punderford .....	104, 643
Boots and shoes, Metal tip for .....	M. Pettingill .....	103, 772
Boots and shoes, Method of constructing .....	J. McComber .....	109, 438
Boots and shoes, Method of lasting .....	W. Chambers .....	104, 828
Boots and shoes, Mode of attaching composition heels to .....	C. H. Helms .....	110, 037
Boots and shoes, rubber, Heel of .....	F. M. Shepard .....	100, 677
Boots and shoes, rubber, Sole of .....	F. M. Shepard .....	100, 678
Boots and shoes, Sand-paper holder for finishing the soles of .....	H. L. Willis .....	100, 229
Boots and shoes, Securing soles to .....	C. S. Chaffee and A. Wallig .....	100, 723
Boots and shoes, Shank-piece for .....	G. V. Sheffield .....	102, 721
Boots and shoes, Sole-edge finishing-machine for .....	L. Coté .....	104, 560
Boots and shoes, Water-proof compound for .....	M. H. Böttger .....	101, 974
Boots and shoes, Wire-driving machine for manufac- turing .....	W. Wickersham .....	106, 011
Boots and shoes, Wire for attaching soles to .....	W. Wickersham .....	106, 241

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Boots and shoes, Wire for making pegs for .....	D. H. Campbell and E. Woodward .....	110, 431
Boots, Buffer and catch for .....	A. A. Veer .....	109, 692
Boots, Machine for heeling .....	C. W. Glidden .....	103, 735
Boots, Machine for heeling .....	T. K. Reed and A. B. Keith .....	109, 756
Boots, Mode of making .....	H. Thayer .....	103, 104
Boot-stretcher .....	J. Harwood .....	99, 034
Boot, Ventilated rubber .....	R. W. Perkins .....	102, 314
Boring and marking, Machine for .....	G. M. Nickason .....	107, 091
Boring and mortising machine .....	S. M. Wright .....	105, 760
Boring-apparatus .....	J. Wheelock .....	108, 310
Boring-machine .....	J. Ribon .....	98, 633
Boring-machine .....	W. Morstatt .....	104, 337
Boring-machine .....	W. Tucker .....	104, 797
Boring-machine .....	J. W. Frazee .....	105, 188
Boring-machine .....	W. W. Carey and G. W. Harris .....	106, 120
Boring-machine .....	C. N. Baldwin .....	108, 552
Boring-machine .....	W. H. Deatrick .....	108, 890
Boring-machine .....	A. J. Truxell .....	109, 078
Boring-machine .....	E. J. Worcester .....	110, 530
Boring posts and pointing rails, Machine for .....	R. Martin and M. Harner .....	104, 476
Boring-tool .....	T. E. Stanley .....	105, 271
Bosom-pads .....	J. Waterman .....	100, 472
Bottle-cock .....	L. A. Perrault .....	100, 321
Bottle-corking machine .....	J. Wolff .....	107, 582
Bottle-fastening .....	B. Bates .....	110, 421
Bottle-fastening, Cork-saving .....	C. L. Knecht .....	103, 624
Bottle-filling apparatus .....	C. A. Gregory .....	105, 323
Bottle-filling apparatus .....	T. Simmons and D. H. Lowe .....	110, 504
Bottle for gaseous liquors .....	J. F. Kubly .....	101, 889
Bottle, Locking-cap for .....	J. T. Hough .....	107, 778
Bottles, Device for packing .....	G. C. Furber .....	106, 149
Bottle-stopper .....	W. and D. Wilson .....	102, 349
Bottle-stopper .....	W. Ely .....	102, 669
Bottle-stopper .....	G. W. Ladd and F. W. Copcutt .....	102, 685
Bottle-stopper .....	H. C. Pratt .....	104, 766
Bottle-stopper .....	N. Thompson .....	104, 794
Bottle-stopper .....	W. H. Gibbs .....	105, 797
Bottle-stopper .....	J. T. Cree .....	106, 557
Bottle-stopper .....	W. Morganstern .....	108, 506
Bottle-stopper .....	W. L. Hoeffler .....	109, 212
Bottle-stoppers, Device for cutting wire or cord from .....	J. A. Traut .....	107, 125
Bottom for wash-boilers and similar vessels .....	G. H. Hazelton .....	104, 589
Bow for carriage-tops .....	J. E. Fowler .....	104, 724
Box .....	C. J. Siercks .....	106, 221
Box .....	J. Nelson .....	106, 393
Box and sifter, Ash .....	H. D. Rogers .....	100, 452
Box and brush, Blacking .....	C. E. Yager .....	106, 909
Box, Ballot .....	G. A. Frébault .....	106, 682
Box, Cartridge .....	J. R. King .....	109, 365
Box, cartridge-case, &c., Manufacture of .....	C. S. Wells .....	108, 542
Box, Cigar .....	C. Jerome .....	100, 296
Box, Cigar .....	M. Richardson .....	101, 381
Box, cigar, Perforated .....	R. S. Jennings .....	99, 204
Box, collar and cuff, Combined .....	J. C. Bauer .....	108, 315
Box, Coal .....	B. R. Deacon .....	101, 833
Box, Egg .....	J. D. Michael .....	98, 609
Boxes, Seal for metal straps on .....	J. P. Herron .....	107, 370
Boxes, wooden, Machine for making .....	J. Cronin .....	102, 232
Box for bluing, &c .....	A. F. Pickens .....	106, 402
Box for coffee, spices, &c .....	H. W. Hutchins .....	98, 502
Box for packing bottles .....	J. J. Solomon .....	109, 961
Box for packing fruit, provisions, &c .....	G. M. Huston .....	109, 821
Boxing for covering the shafting of machinery .....	M. R. Jones .....	105, 695
Box, Fruit .....	L. L. Gilliland .....	104, 016
Box, Fruit .....	C. Colby and H. C. Ward .....	106, 663
Box, Fruit-carrying .....	G. A. Lloyd .....	107, 070
Box, Fruit-transportation .....	W. Shaw .....	100, 676
Box, Fur-set .....	C. W. Frazer .....	110, 615
Box-hook .....	C. Bruso .....	102, 087
Box, Letter .....	E. C. Weld .....	108, 073
Box, Lubricating .....	C. Andrews .....	106, 762
Box, Lunch .....	J. Erpelding .....	101, 113
Box, Lunch .....	J. Elson .....	108, 989
Box, Money .....	*G. W. McDaniel .....	101, 144
Box, Muff and collar .....	H. Fowler .....	100, 703
Box, Muff and collar .....	G. L. Jaeger .....	109, 323
Box, Muff, collar, and cuff .....	J. C. Budd .....	108, 755
Box, Musical .....	A. Paillard .....	105, 972
Box-opener .....	A. Heusser .....	103, 330
Box-opener .....	M. Purdey .....	108, 293
Box or case for hot-beds .....	W. Wells .....	106, 298



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Box or case to contain bacon, hams, &c .....	M. W. Brown .....	108, 322
Box, Paper .....	F. Field .....	98, 860
Box, Paper-collar .....	S. Kaufmann .....	104, 853
Box, Pepper and spice .....	A. E. Turnbull, jr .....	110, 608
Box, Safe-deposit .....	W. H. Butler .....	104, 263
Box, Spelling .....	A. P. M. Jeffers .....	98, 773
Box, Spice .....	E. S. Kennedy .....	110, 473
Box, Stereoscope .....	T. Fugate .....	107, 476
Box, Stove-blackening .....	W. W. Armington .....	102, 646
Box, Tobacco .....	C. Doering .....	99, 764
Box, Tree .....	H. Merrick .....	103, 280
Box, Wood .....	F. Ficht .....	104, 132
Box, Wooden .....	O. Abell .....	101, 804
Box, Wooden .....	O. Abell .....	101, 805
Box, Wooden .....	M. Gilbert .....	108, 700
Box, Wooden-hoop .....	S. S. Barrie .....	109, 373
Box, Work .....	J. E. Marvel .....	103, 278
Bracelet .....	D. D. Coddington .....	100, 504
Bracelet .....	W. H. Ball and T. Barnard .....	107, 325
Bracelet .....	H. Carlisle, jr .....	107, 653
Bracelet .....	J. Barclay .....	107, 588
Bracelet .....	H. Carlisle, jr .....	108, 683
Bracelets, Stock or blank for .....	J. B. Staples .....	106, 740
Brace, Wagon and buggy .....	N. Ramseyer .....	106, 618
Bracket, Coach-lamp .....	T. Bondren .....	98, 468
Bracket for supporting stove-pipe shelves .....	H. Vansands .....	103, 107
Bracket-hanger .....	C. E. Bliven .....	101, 219
Bracket, Hat and cap .....	T. Lawrence .....	107, 389
Bracket, Lamp .....	R. S. Merrill .....	107, 279
Bracket, Lamp .....	R. Marsh .....	107, 699
Bracket, Metallic .....	A. D. Judd .....	104, 463
Bracket, Metallic .....	A. D. and E. M. Judd .....	104, 464
Bracket, Roofing .....	L. W. Merriam .....	108, 924
Bracket, Scaffold .....	J. Chattin .....	98, 559
Bracket, Scaffold .....	E. Parker .....	99, 941
Bracket, Scaffold .....	J. M. Taylor .....	104, 081
Brackets, chandeliers, &c., Attaching lamp-fountains to .....	C. Mudge .....	107, 706
Bracket, Shelf .....	G. Bohner .....	109, 864
Bracket, Shingling .....	I. H. Frost .....	107, 245
Brad-setter .....	E. J. Worcester .....	108, 748
Braiding-machines, Let-off and tension-device for spools of .....	M. D. Converse .....	100, 605
Braiding-machines, Stop-motion for .....	J. D. Butler .....	100, 596
Braiding-machines, Stop-motion spring for .....	E. W. Dean .....	106, 672
Braids, trimmings, &c., Manufacture of imitation .....	G. K. Winchester .....	105, 022
Brake and starter, Car .....	H. Loewenberg .....	106, 068
Brake and starter, Car .....	J. M. McMaster .....	98, 788
Brake and starter, Car .....	J. W. Wilson .....	99, 509
Brake and starter, Car .....	E. P. Jones .....	100, 960
Brake and ratchet for elevating and lowering buckets .....	I. T. Smith .....	100, 201
Brake, buggy, Automatic .....	L. T. Connant .....	106, 555
Brake, Car .....	A. M. Allen .....	98, 731
Brake, Car .....	G. H. Seymour .....	101, 667
Brake, Car .....	R. Hurd .....	104, 738
Brake, Car .....	J. Steger .....	104, 697
Brake, Car .....	T. E. Sickels .....	105, 264
Brake, Car .....	H. A. Goodman .....	106, 052
Brake, Car .....	M. W. Griswold .....	106, 152
Brake, car, Automatic .....	M. Wilkin and J. Clark .....	100, 958
Brake, car, Electro-magnetic .....	J. Olmstead .....	98, 880
Brake, car, Pneumatic .....	D. Myers and A. B. Pullman .....	103, 932
Brake, Carriage .....	H. B. S. Davis .....	107, 462
Brake, car, Safety .....	A. S. Martin .....	106, 847
Brake for carriages and wagons .....	J. G. Bicknell .....	104, 357
Brake for land-conveyance .....	W. T. Kosinksi .....	108, 366
Brake for railway-cars, Atmospheric .....	S. Marsh .....	101, 895
Brake for wagons .....	H. Racke .....	105, 845
Brake, Hemp .....	G. Rymel .....	102, 596
Brake, Locomotive and car .....	J. C. Wilson .....	102, 072
Brake, Railway-car .....	O. S. Pilase and L. E. Skinner .....	98, 621
Brake, Railway-car .....	E. Slater .....	98, 716
Brake, Railway-car .....	J. Steger .....	99, 257
Brake, Railway-car .....	W. G. Foster .....	99, 424
Brake, Railway-car .....	J. M. Crosby and W. Ballard .....	99, 539
Brake, Railway-car .....	D. M. Elder .....	99, 545
Brake, Railway-car .....	E. N. Huntsman .....	99, 678
Brake, Railway-car .....	E. P. Jones .....	100, 900
Brake, Railway-car .....	D. P. Lefevre and L. P. Dorré .....	101, 289
Brake, Railway-car .....	E. P. Vining .....	101, 791
Brake, Railway-car .....	A. Higley .....	101, 874
Brake, Railway-car .....	A. H. Lighthall .....	102, 840

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Brake, Railway-car .....	T. Roper, H. Hooper, and C. C. Coats ..	103, 886
Brake, Railway-car .....	E. W. Sandford .....	106, 412
Brake, Railway-car .....	J. L. G. Rice .....	108, 830
Brake, Railway-car .....	F. M. Finnell .....	109, 727
Brake shoe, Railway .....	E. H. Zitzman .....	99, 515
Brake, Sled .....	L. P. Mosher .....	98, 993
Brake, Sled .....	G. W. Sanborn .....	100, 560
Brake, Sled .....	J. E. Coutant .....	104, 429
Brake, Sled .....	J. Willis .....	108, 545
Brake, Sleigh .....	H. W. Smith .....	109, 957
Brake, Wagon .....	C. M. Howell .....	99, 194
Brake, Wagon .....	E. P. Jones .....	100, 901
Brake, Wagon .....	M. Powell .....	101, 308
Brake, Wagon .....	R. Hurd .....	102, 009
Brake, Wagon .....	A. Quimby .....	106, 406
Brake, Wagon .....	D. J. Rundell .....	108, 835
Brake, Wagon .....	J. Robinson .....	109, 761
Brake, Wagon .....	J. Mickey and J. E. Hartman ..	109, 832
Brake, Wagon .....	G. W. Sanborn .....	109, 843
Brake, Wagon .....	J. Wolfla .....	110, 183
Brake, wagon, Automatic .....	S. and F. M. Pickerill .....	99, 230
Brake, wagon, Automatic .....	F. M. Pickerill .....	102, 589
Brand for canceling stamps .....	A. D. Owen .....	103, 919
Bread, aerated, Apparatus for the manufacture of .....	A. Scatchard .....	102, 325
Bread and meat slicer .....	J. Ensinger and L. Fertig .....	98, 576
Bread-baking apparatus .....	J. A. H. Te Gantvoort .....	104, 662
Bread, Device for baking .....	A. I. Quackenbush and G. Hawn ..	99, 109
Bread-machine .....	J. E. Hawkins .....	101, 615
Bread-machine .....	L. P. Jenks .....	102, 943
Bread, Preserving .....	J. J. A. Mouries .....	107, 088
Bread-toaster .....	H. P. Brooks .....	106, 462
Bread-toaster .....	A. Brown .....	106, 654
Breaking hides and working leather, Machine for .....	E. D. Taylor and W. Rude .....	107, 562
Breaking-machine .....	J. D. Whelpley .....	104, 910
Breaking, scutching, and separating fibrous material, Machine for .....	E. Brasier .....	103, 135
Breakwater .....	L. Gutekunst .....	98, 953
Breast-pin .....	T. G. Eiswald .....	104, 840
Breast-plate for the breast-collars of double harness .....	C. Graham .....	100, 223
Breweries and bars, Collecting waste spirits from .....	A. Maginnis and W. McCormick ..	100, 428
Brewers and distillers, Testing-instrument for .....	M. Augenstein .....	109, 168
Brick and tile machine .....	G. Scott .....	101, 525
Brick-machine .....	J. S. Hobbs and L. R. Elder .....	98, 495
Brick-machine .....	T. Bishop and D. Agnew .....	98, 547
Brick-machine .....	H. D. Thorp and J. G. Lehr .....	99, 371
Brick-machine .....	T. and W. A. Ellis .....	99, 658
Brick-machine .....	B. M. and E. R. Gard .....	100, 136
Brick-machine .....	G. C. Bovey .....	100, 590
Brick-machine .....	F. L. Clarke .....	101, 432
Brick-machine .....	C. V. Hemenway .....	101, 616
Brick-machine .....	C. H. Williams .....	101, 690
Brick-machine .....	C. T. Wrightington .....	101, 696
Brick-machine .....	G. W. Harlan .....	102, 115
Brick-machine .....	C. W. Ferguson .....	102, 794
Brick-machine .....	R. Wolf .....	102, 903
Brick-machine .....	T. S. Emery .....	102, 929
Brick-machine .....	F. Whitcomb .....	103, 805
Brick-machine .....	J. L. Chapman .....	104, 268
Brick-machine .....	H. Mauthe .....	104, 330
Brick-machine .....	S. Rigby, 3d .....	104, 354
Brick-machine .....	J. Keller .....	106, 490
Brick-machine .....	J. S. Elliott .....	107, 017
Brick-machine .....	D. P. Dobbins and J. Langster ..	108, 012
Brick-machine .....	Z. Phillips .....	108, 511
Brick-machine .....	M. D. Williams .....	108, 864
Brick-machine .....	C. Chambers, jr .....	108, 880
Brick-machine .....	W. Mendham and C. Chambers, jr ..	109, 034
Brick-machine .....	J. R. Williams .....	109, 089
Brick-machine .....	J. R. Armstrong .....	109, 376
Brick-machine .....	S. H. Taylor .....	109, 777
Brick-machine .....	C. Chambers, jr .....	109, 803
Brick-machine .....	J. M. Austin .....	109, 997
Brick-machines, Off-bearing apparatus for .....	C. Chambers, jr .....	104, 705
Brick-machines, Off-bearing truck for .....	W. Olds .....	109, 339
Brick, Paving .....	D. Moffat and J. Thompson .....	102, 144
Brick-repressing machine .....	A. J. Sprague .....	105, 270
Bricks, &c., Kiln for burning .....	W. S. Hall .....	101, 870
Bricks, Arching .....	W. F. Quimby .....	106, 203
Bricks, Manufacture of .....	G. S. Hewitt .....	100, 892
Bricks, tiles, &c., from slag, Manufacture of .....	F. Fabre .....	103, 591
Bridge .....	C. H. Parker .....	98, 620

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Bridge.....	H. S. McDowell.....	98, 699
Bridge.....	G. P. Herthel, jr.....	98, 866
Bridge.....	C. S. and F. H. Smith and C. H. Latrobe.....	99, 017
Bridge.....	C. H. Parker.....	100, 185
Bridge.....	C. H. Parker.....	103, 233
Bridge.....	D. McCurdy.....	104, 867
Bridge.....	D. McCurdy.....	104, 868
Bridge.....	D. McCurdy.....	104, 869
Bridge.....	T. B. Gregory.....	105, 195
Bridge.....	J. Seebold.....	105, 497
Bridge.....	T. W. H. Moseley.....	106, 855
Bridge.....	J. Seebold.....	107, 106
Bridge.....	I. H. Wheeler.....	107, 576
Bridge.....	M. Turly.....	110, 173
Bridge.....	A. McD. Campbell.....	110, 546
Bridge, Flood.....	T. A. Bryan.....	106, 995
Bridge-gate.....	H. Wermerskirchen.....	104, 086
Bridge-gate.....	J. D. Sturges.....	107, 109
Bridge, Iron.....	H. C. Brundage.....	100, 254
Bridge, Iron.....	M. Miller.....	103, 911
Bridge, Iron.....	L. E. Truesdell.....	104, 902
Bridges and other structures, Tubular-arch girders for.	D. Hammond and J. Abbott.....	102, 392
Bridges, buildings, &c., Method of preventing decay in the timbers of.	A. Allen.....	106, 647
Bridges, Truss.....	M. S. and H. B. Carter.....	104, 110
Bridge, Suspension.....	J. Royal.....	99, 597
Bridge, Truss.....	J. S. Adams.....	106, 760
Bridge, Truss.....	W. Johnson.....	109, 628
Bridge, Truss-frame.....	C. Kellogg.....	104, 036
Bridge, Truss-frame.....	J. Foreman.....	104, 295
Bridge, Truss-girder.....	D. Hammond and J. Abbott.....	102, 394
Bridge, Tubular.....	G. H. White.....	108, 663
Bridge, Tubular-arch.....	T. W. H. Moseley.....	103, 765
Bridge, Tubular-arched.....	W. S. Levake.....	104, 969
Bridle.....	M. H. Buchanan.....	99, 834
Bridle for harness.....	G. Horter.....	105, 081
Bridle, Rosette for.....	J. O. Brien.....	108, 725
Bridles, harness, Manufacture of winkers for.....	E. Ware.....	103, 530
Bridles, harness, Winker for.....	W. Boyd.....	105, 544
Brine and other liquids, Apparatus for evaporating.....	J. Buchanan.....	109, 602
Brine for the manufacture of salt, Purifying.....	F. M. Smith.....	108, 198
Broiler.....	A. C. Hull.....	160, 410
Broiler.....	D. W. Denman and W. K. Tillotson.....	101, 236
Broiler.....	A. L. H. Graham.....	101, 361
Broiler.....	W. C. Stiver and J. S. Williams.....	104, 075
Broiler.....	B. Marshall.....	104, 611
Broiler.....	D. E. Roe.....	106, 210
Broiler.....	J. T. Page.....	106, 280
Broiler.....	A. Dick.....	108, 768
Broiler and furnace, Combined.....	J. S. Runyan.....	106, 288
Broiler and toaster.....	J. M. Read and J. M. Smith.....	110, 559
Broiler for meat.....	H. Willard.....	102, 348
Bromine, Apparatus for the production of.....	H. Stieren and W. A. Nisbet.....	103, 253
Bronze and other castings, Process of removing earthy matter from.	M. Smith.....	110, 081
Bronzing and gilding.....	J. L. Duffee.....	102, 198
Bronzing-machine.....	S. Crump.....	106, 667
Bronze-machines, Bronze-collecting attachment to.....	S. Crump.....	101, 830
Brooch-fastening.....	W. Sackermann.....	108, 520
Broom.....	W. C. Spellman.....	100, 336
Broom.....	T. Walter.....	100, 343
Broom.....	G. Stackpole.....	101, 675
Broom.....	J. H. Parsons.....	102, 310
Broom.....	W. S. Hancock.....	102, 936
Broom.....	E. M. Crandal.....	104, 834
Broom.....	J. H. Anderson.....	106, 021
Broom and whisk.....	E. P. Cooley.....	104, 118
Broom-brace.....	F. O. Willey.....	100, 228
Broom-corn seed-stripper.....	G. E. Burt and E. A. Hildreth.....	107, 445
Broom for stables, &c.....	T. Wright.....	99, 512
Broom-handle.....	J. Strong.....	107, 559
Broom-head.....	W. A. Middleton.....	101, 901
Broom-head.....	W. C. Spellman.....	103, 791
Broom-holder.....	C. P. Snow.....	104, 787
Broom-holder.....	W. H. Bixler.....	109, 375
Broom or mop clamp.....	E. Chapman.....	107, 336
Brooms, brushes, &c., Clamp for holding.....	A. B. Thompson.....	101, 062
Brush.....	F. McLaughlin.....	98, 787
Brush.....	J. L. Whiting.....	101, 332
Brush.....	O. D. Woodbury.....	102, 460
Brush.....	C. F. Ruset.....	105, 130

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Brush.....	J. L. Whiting.....	106, 902
Brush.....	J. L. Whiting.....	107, 742
Brush.....	R. J. Combs.....	108, 108
Brush.....	J. L. Whiting.....	109, 084
Brush and case, Blacking.....	J. Schwab.....	104, 361
Brush, Attachment for.....	S. Pearson.....	101, 307
Brush, Blacking.....	G. W. Lishawa.....	99, 095
Brush, Dusting.....	L. R. Witherell and A. B. Crandall.....	104, 092
Brush, Ear.....	G. W. Wood.....	102, 351
Brushes, Construction of.....	J. Marchbank.....	106, 845
Brushes, cylindrical, Device for trimming.....	A. G. Risley.....	110, 073
Brushes, Device for manufacturing.....	C. F. Ruset.....	105, 131
Brushes, Machine for making.....	O. D. Woodbury.....	110, 529
Brushes, Manufacture of.....	C. F. Ruset.....	105, 373
Brushes, paint, Ferrule for.....	W. B. Burtnett.....	106, 545
Brush, Fly.....	J. E. Darnall.....	109, 720
Brush for cleaning tumblers.....	A. Fischer.....	106, 476
Brush, Hair.....	S. M. Firey.....	106, 680
Brush-handle attachment.....	R. Wyatt.....	101, 400
Brush or comb, Hair.....	T. Divine.....	104, 125
Brush, Paint.....	G. K. Thompson.....	99, 267
Brush, Paint.....	J. Rayls.....	99, 276
Brush, Paint.....	G. G. Morris.....	99, 338
Brush, Paint.....	C. S. Benjamin and E. Story.....	100, 108
Brush, Paint.....	A. McDonald and J. M. White.....	106, 384
Brush, Paint.....	W. B. Burtnett.....	106, 544
Brush, Paint.....	G. L. Shuttleworth.....	107, 200
Brush, Paint.....	J. L. Whiting.....	108, 420
Brush, Paint.....	A. McDonald.....	108, 923
Brush, Pocket.....	T. F. Stumpf.....	110, 603
Brush, Scrubbing.....	J. See.....	100, 932
Brush, Scrubbing.....	B. S. Koller.....	101, 630
Brush, Scrubbing.....	J. Odell.....	106, 196
Brush, Scrubbing.....	D. Minderle.....	107, 397
Brush, Scrubbing.....	R. Rockwell and Z. B. Custer.....	109, 946
Brush, Shoe.....	F. D. Holland.....	102, 540
Brush, Tooth.....	R. K. Chandler.....	99, 161
Brush-wheel.....	P. Felker.....	102, 932
Buchu, Compound troche of.....	H. J. Hamilton.....	103, 876
Buck-board, Wagon.....	M. Miller.....	107, 076
Bucket, Chain-pump.....	F. P. Hunt.....	103, 619
Bucket for paddle-wheels.....	A. C. Loud.....	106, 704
Bucket, Well.....	A. J. Clemmons.....	106, 326
Bucket, Wood.....	S. S. Vail.....	107, 568
Buckle.....	N. Dice.....	98, 572
Buckle.....	M. Adams.....	100, 963
Buckle.....	J. J. Adair.....	102, 076
Buckle.....	T. Duncan.....	104, 564
Buckle.....	J. C. Hyde.....	109, 321
Buckle.....	L. D. Cowles.....	109, 871
Buckle.....	G. E. Stedman.....	109, 849
Buckle.....	F. Puetz.....	109, 941
Buckle.....	E. P. Corwin.....	110, 115
Buckle, Belt.....	I. Alexander.....	104, 683
Buckle, Hames.....	D. Vogt.....	102, 889
Buckle, Harness.....	G. Reyner.....	102, 040
Buckle, Harness.....	A. Bedford.....	103, 128
Buckles, Attachment.....	H. Trott.....	103, 395
Buckle, Self-tightening.....	M. Marvin.....	101, 482
Buckle, Trace.....	J. Thornton and C. F. Demmen.....	102, 333
Buckle, Trace.....	T. C. Martin and J. Offineer.....	102, 843
Buckle, Trace.....	C. H. Stevens.....	105, 509
Buckle, Trace.....	A. H. Hopson.....	105, 944
Buckle, Trace.....	L. Brooks.....	109, 378
Buckle, Trace.....	W. W. Kittleman.....	110, 572
Buckle, with button-hole attachment.....	B. J. Greely.....	106, 356
Buck-saw.....	A. B. Sprout.....	110, 509
Buck-saw frame.....	G. R. Kimball.....	105, 949
Buffer-heads for car-coupling.....	W. Richards, jr.....	105, 491
Beffing-apparatus for finishing spoons.....	H. Barrett.....	108, 092
Buggy-gearing.....	J. B. Augur.....	102, 905
Buggy-seat, Folding.....	T. H. Wood.....	105, 758
Buggy-top, Shifting.....	G. Stricker.....	106, 292
Buhl-saw.....	T. Leavitt.....	110, 051
Building-blocks from slag, Manufacture of.....	C. Diebold.....	101, 535
Building, Iron.....	T. W. H. Moseley.....	106, 854
Buildings.....	J. Tonailon.....	99, 973
Buildings, &c., Construction of concrete arches for.....	C. C. Dennett.....	98, 571
Buildings, Apparatus for heating and ventilating.....	J. Stover.....	103, 202
Buildings, Apparatus for moving.....	M. N. Gordon.....	107, 249
Buildings, Cooling.....	T. Krausch.....	108, 707

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Buildings, Device for moving .....	S. Inman .....	107, 615
Buildings, Fire-proof. ....	A. Wanner .....	101, 191
Buildings, Metal-roof for .....	J. S. Haywood .....	110, 567
Buildings, Process and apparatus for supplying pure water to. ....	J. A. Thompson .....	101, 544
Buildings, Sheathing-board for .....	W. E. Hale .....	99, 432
Bumper and draw-head, Railway-car. ....	A. Ross and J. Arthur .....	109, 347
Bundling wood, Machine for .....	J. Rushworth .....	103, 731
Bung .....	J. F. Applegate and C. Feiock .....	101, 078
Bung .....	D. Leichtstadt .....	102, 285
Bung .....	J. F. Applegate .....	104, 244
Bung .....	D. M. Cummings .....	104, 935
Bung .....	A. Warth .....	105, 613
Bung .....	J. F. Applegate .....	106, 023
Bung .....	A. Warth .....	105, 100
Bung .....	V. Fountain, jr. ....	107, 473
Bung-borer .....	W. A. Ives .....	106, 168
Bung-cutter .....	J. I. Monroe .....	101, 903
Bung-lock .....	H. Fischer .....	103, 897
Bureau .....	G. S. Graf .....	102, 809
Bureau .....	C. Kilburn .....	106, 941
Bureaus and other articles of furniture, Device for holding the parts together. ....	D. A. Mullane and J. O. L. Murray .....	99, 460
Bureaus, Boot-blackening attachment to .....	W. E. Phelps .....	103, 365
Bureaus, Mode of attaching looking-glass frames to. ....	C. Kilburn .....	106, 665
Burglar-alarm, electro-magnetic, Automatic circuit-closer for. ....	J. P. Snyder .....	107, 301
Burglars, Protecting safes and vaults from. ....	W. M. and A. Clark .....	106, 325
Burial-case .....	R. Hunt .....	104, 737
Burial-case .....	G. Shilling .....	107, 552
Burner for locomotive head-lights .....	A. C. Vaughan .....	106, 971
Burner, Gas .....	J. W. Cremin .....	98, 744
Burner, Gas .....	T. Clough .....	104, 271
Burner, Gas .....	C. S. Ford .....	104, 723
Burner, Gas .....	J. F. Barker .....	105, 768
Burner, Gas .....	A. E. Dupas .....	107, 234
Burner, Gas .....	C. S. Ford .....	105, 579
Burner, Gas .....	A. Fulton .....	109, 404
Burner, Hollow wick-lamp. ....	J. W. Emerson .....	108, 694
Burner, Hydrocarbon .....	A. De Lamsée .....	100, 268
Burner, Lamp .....	L. J. Attwood .....	98, 836
Burner, Lamp .....	J. H. Irwin .....	99, 443
Burner, Lamp .....	M. H. Collins .....	100, 260
Burner, Lamp .....	R. S. Merrill .....	100, 653
Burner, Lamp .....	D. P. Wright and C. Butler .....	101, 073
Burner, Lamp .....	J. S. Wetherby .....	102, 342
Burner, Lamp .....	P. Baker .....	102, 355
Burner, Lamp .....	A. Taplin .....	102, 449
Burner, Lamp .....	J. D. Willoughby .....	102, 457
Burner, Lamp .....	J. H. Johnson .....	102, 552
Burner, Lamp .....	S. W. Fowler .....	102, 674
Burner, Lamp .....	A. Taplin .....	102, 723
Burner, Lamp .....	H. J. White .....	102, 897
Burner, Lamp .....	W. D. Ludlow .....	103, 213
Burner, Lamp .....	J. B. Fuller .....	103, 593
Burner, Lamp .....	R. Nutting .....	103, 917
Burner, Lamp .....	G. Berkstresser .....	103, 967
Burner, Lamp .....	G. L. Smith .....	104, 366
Burner, Lamp .....	R. S. Merrill .....	104, 624
Burner, Lamp .....	R. S. Merrill .....	104, 625
Burner, Lamp .....	R. R. Crosby .....	104, 709
Burner, Lamp .....	G. R. Lyon .....	104, 971
Burner, Lamp .....	B. F. Adams .....	106, 302
Burner, Lamp .....	B. F. Adams .....	106, 303
Burner, Lamp .....	H. W. Hayden .....	106, 363
Burner, Lamp .....	S. R. Wilmot .....	99, 078
Burner, Lamp .....	S. R. Wilmot .....	108, 667
Burner, Lamp .....	G. Lupton .....	110, 055
Burner, Lamp .....	W. Proctor, and J. and G. W. Taylor .....	119, 241
Burners, gas, Shield for. ....	I. W. Shaler .....	107, 824
Burner, Vapor .....	J. E. Finley .....	98, 680
Burner, Vapor .....	W. W. Tyson .....	98, 817
Burner, Vapor .....	H. Wellington .....	98, 824
Burner, Vapor .....	W. Bliesner .....	98, 842
Burner, Vapor .....	J. C. Love .....	99, 688
Burner, Vapor .....	J. C. Love .....	99, 689
Burner, Vapor .....	B. D. Greene .....	99, 878
Burner, Vapor .....	H. C. De Witt .....	100, 270
Burner, Vapor .....	H. Wellington .....	100, 572
Burner, Vapor .....	I. Kling .....	100, 774
Burner, Vapor .....	H. Schminko .....	100, 930



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Burner, Vapor .....	W. Aurich .....	101, 079
Burner, Vapor .....	A. F. Zeigler .....	101, 202
Burner, Vapor .....	D. Berkey .....	101, 215
Burner, Vapor .....	S. D. Baldwin .....	101, 413
Burner, Vapor .....	C. E. Smith and H. J. Rice .....	102, 169
Burner, Vapor .....	F. Gould .....	102, 251
Burner, Vapor .....	T. Tully .....	102, 335
Burner, Vapor .....	T. Ward .....	102, 339
Burner, Vapor .....	J. W. Baker .....	102, 749
Burner, Vapor .....	D. R. Fletcher .....	104, 009
Burner, Vapor .....	J. Shay .....	105, 133
Burner, Vapor .....	L. A. Gouch .....	105, 669
Burner, Vapor .....	T. Moore .....	105, 589
Burner, Vapor .....	R. W. Park .....	106, 199
Burner, Vapor .....	R. W. Park .....	106, 250
Burner, Vapor .....	T. Ward .....	106, 522
Burner, Vapor .....	E. Gillert .....	106, 574
Burner, Vapor .....	B. D. Green .....	106, 689
Burner, Vapor .....	W. H. Smith .....	106, 736
Burner, Vapor .....	J. White .....	106, 753
Burner, Vapor .....	J. F. Marsh .....	107, 072
Burner, Vapor .....	W. Thompson .....	107, 737
Burner, Vapor .....	H. Wellington .....	107, 741
Burner, Vapor .....	C. E. Smith .....	108, 528
Burner, Vapor .....	D. Leonard .....	108, 711
Burner, Vapor .....	J. J. Palmer .....	110, 276
Burner, Vapor or gas .....	J. C. Love .....	105, 819
Burrs from wool, Removing .....	P. Casson .....	107, 447
Bush for spindles, Self-packing .....	C. Miller .....	102, 842
Bushing for warp-beams .....	R. Ferguson .....	110, 450
Bustle .....	D. McImoy .....	108, 039
Bustle .....	J. Broughton .....	108, 872
Bustle .....	J. Broughton .....	108, 873
Butter-extractor .....	T. Curtis .....	104, 120
Butter from cream, Apparatus for producing .....	S. D. Warner and O. W. Thomas .....	100, 224
Butter, Making .....	A. Mot .....	105, 479
Butter, Preserving .....	J. F. Saiger .....	99, 240
Butter-printer .....	W. C. Stern and J. W. Robinson .....	109, 070
Butter-worker .....	O. L. Dow .....	101, 444
Butter-worker .....	W. S. and E. H. Shoemaker .....	102, 055
Butter-worker .....	J. P. Adams and J. P. Corbin .....	106, 104
Butter-worker .....	J. N. Brush .....	109, 331
Butt-hinge, Reversible .....	D. F. Hale .....	102, 538
Butt-hinges, Machine for countersinking the holes in .....	L. P. Summers .....	109, 851
Butt-hinges, Machine for milling the knuckles of .....	E. Parker .....	105, 487
Button .....	J. A. Spooner and J. Ellerby .....	99, 365
Button .....	R. H. Guilford .....	103, 451
Button .....	J. F. Collins and A. Neill .....	103, 571
Button, Carriage-curtain .....	A. Comstock and J. H. Nicholson .....	103, 985
Button-fastener .....	F. M. L. Boiteaux .....	109, 024
Button-fastener .....	E. F. Lee .....	109, 134
Button-fastener for shoes .....	C. F. Spencer .....	99, 724
Button-fastening .....	M. Wise .....	102, 190
Button-fastening .....	J. G. Gaston .....	103, 443
Button-hole cutter .....	T. C. Bush .....	107, 332
Button-hook and handkerchief-holder combined .....	G. D. Stevens .....	108, 063
Button-machine .....	C. Volkert .....	107, 570
Button or lacing hook, Machine for setting .....	H. C. Bradford .....	104, 257
Buttons, Centering shanks or eyes in .....	W. H. Blake .....	99, 394
Buttons, Device for attaching the shank to mineral and composition .....	C. L. Potter .....	110, 070
Buttons, Eyelets for fastening .....	S. M. Porter .....	105, 978
Buttons, glass, Machine for molding .....	C. Vigneron .....	102, 070
Button, Window .....	M. and A. D. Judd .....	98, 694
Butt, Reversible .....	G. W. Field .....	109, 604
Butts, Machine for centering .....	E. Parker .....	105, 488
C.		
Cabinet .....	R. Bacon .....	99, 746
Cable-stopper .....	E. R. Cheney and J. J. Emery .....	104, 425
Cable-stopper .....	J. Stitt .....	105, 510
Cable-stopper .....	E. R. Cheney and J. J. Emery .....	106, 031
Caissons, Dumb-waiter for .....	H. Flad .....	109, 505
Calculator .....	A. Brodie .....	102, 216
Caldron, Agricultural .....	E. E. Sill and A. H. Bennett .....	109, 679
Calendar .....	J. T. Tannatt .....	100, 338
Calendar .....	V. A. Maurin and G. Toiray .....	103, 216
Calendar, Hand-setting .....	C. H. Wight .....	101, 333
Caliper .....	T. C. Page and G. W. Hadley .....	99, 698
Caliper .....	H. K. Porter .....	103, 926

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Caliper.....	A. E. Whitmore.....	105, 153
Calipers.....	W. Siar.....	99, 961
Calipers.....	W. A. Sharpe.....	108, 640
Caliper, Sliding.....	A. F. Whitmore.....	101, 689
Call-bell and caster-stand.....	F. A. Blätterlien.....	109, 101
Call-bell and slop-bowl.....	N. Lawrence.....	104, 859
Call-bell and vessel.....	N. Lawrence.....	106, 840
Cam, Adjustable.....	C. F. Annan.....	110, 537
Camera, Photographic.....	I. H. Stoddard.....	99, 026
Camera-screen.....	F. Peabody.....	99, 343
Camera, Solar.....	N. Bryan.....	107, 441
Camera-stand.....	W. W. Dames.....	101, 985
Cam-lever.....	S. Whitman.....	99, 991
Canal-boat, Propelling.....	E. K. Watson.....	107, 573
Canal-boats, Apparatus for towing.....	S. W. and J. F. Palmer.....	109, 045
Canal-boats, Device for propelling.....	J. B. Calman.....	106, 547
Canal-boats, Machinery for towing.....	O. Do Mesnil and M. Eyth.....	103, 724
Canal-boats, Propelling.....	W. F. Goodwin.....	101, 004
Canal-boats, Propelling.....	J. Reid.....	109, 248
Canal-boats, Propulsion of.....	J. L. Hornig.....	110, 466
Canal-lock mechanism.....	G. Heath.....	110, 459
Canal waste-way and sluice-gate.....	A. J. Whitney.....	109, 984
Can and cooler, Milk.....	S. Shattue.....	107, 107
Can-bottom, Metallic.....	H. W. Shepard.....	98, 526
Can-caps, Machine for soldering.....	W. R. Bishop.....	109, 577
Canceling-stamp.....	C. E. Donnellan.....	109, 302
Cancer and other diseases, Extract for the cure of.....	P. A. Cobb.....	102, 093
Can-cover, Metallic.....	H. W. Shepard.....	101, 929
Candle and lamp wick, Treating.....	T. S. Williams and F. A. Taber.....	103, 534
Candle for miners' use.....	P. R. Gottstein.....	101, 857
Candlestick.....	S. Gardiner.....	99, 875
Candlestick.....	H. Rider.....	105, 257
Candlestick.....	H. Zahn.....	105, 875
Candlestick.....	F. C. Cone.....	108, 109
Candles, tubular, Manufacture of.....	F. A. Taber.....	103, 388
Can, Dredging.....	D. W. Pepper.....	102, 428
Candy-machine.....	J. S. Batchelder.....	103, 962
Cane and whip combined.....	C. L. Bushnell.....	98, 664
Cane and whip combined.....	C. L. Bushnell.....	109, 297
Cane-gun.....	W. H. Werner.....	104, 087
Cane-juice, Apparatus for defecating.....	C. K. Marshall.....	101, 288
Cane-juice, Evaporating.....	S. A. Poché.....	104, 491
Cane-juice with sulphurous acid gas, Apparatus for treating.....	J. W. Austin.....	109, 571
Cane-stripper.....	C. A. Hegø.....	108, 135
Can-filler, Funnel.....	N. L. Brundage and R. Downing.....	100, 851
Can, Fruit.....	I. Kling.....	101, 024
Can, Fruit.....	S. Lutz.....	102, 952
Can, Fruit.....	J. F. Merrill.....	105, 109
Can, Fruit.....	G. E. Heinig.....	105, 572
Can, Measuring.....	A. G. Wilson.....	109, 283
Can, Milk.....	J. Cochran.....	100, 376
Can, Milk.....	H. Sangster.....	100, 454
Can, Milk.....	A. Sunderland.....	101, 784
Can, Milk.....	C. L. Camp and J. H. Chappel.....	103, 137
Can, Milk.....	J. C. Milligan.....	107, 521
Cannon, Casting.....	J. B. Tarr.....	98, 894
Cannon-pinion for watches.....	E. H. Hull.....	101, 464
Cannon, Repeating.....	J. H. Hedrick.....	110, 233
Cannon, Revolving.....	E. Brehm.....	110, 194
Cannon, Rifled.....	A. C. Stimers.....	105, 736
Can, Oil.....	P. C. Clark.....	99, 407
Can, Oil.....	P. Scanlan.....	99, 789
Can, Oil.....	J. L. Folsom.....	100, 279
Can, Oil.....	J. D. Gray.....	100, 393
Can, Oil.....	P. J. Dwyer.....	101, 839
Can, Oil.....	J. R. Compton and C. M. Toms.....	103, 428
Can, Oil.....	W. Westlake.....	107, 141
Can, Oil.....	H. C. Warfel.....	109, 693
Can-opener.....	H. C. Alexander.....	99, 046
Can-opener.....	A. Barker.....	103, 125
Can-opener.....	W. W. Lyman.....	105, 346
Can-opener.....	W. W. Lyman.....	105, 583
Can-opener.....	A. C. Platt.....	106, 723
Can-opener.....	J. Kaufmann.....	107, 061
Canopy for bedsteads.....	A. M. Rodgers.....	101, 165
Cans, Cutting and pressing the head of.....	R. Brady.....	98, 559
Can, Sheet-metal.....	M. M. Lewis.....	98, 780
Can, Sheet-metal.....	H. Everett.....	101, 847
Can, Sheet-metal.....	J. Le Comte and G. H. Perkins.....	104, 747
Can, Sheet-metal.....	F. Albaum.....	106, 533

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Can, Sirup .....	A. Tumler .....	109, 691
Cans, liquid, Self-acting valve or cut-off for .....	H. S. Snow .....	110, 166
Cans, Safety-cap for .....	H. C. Alexander .....	104, 402
Cans, Safety-cap for .....	H. C. Alexander .....	105, 157
Cans, Seam for .....	A. L. Webster .....	105, 152
Cans, sheet-metal, Machine for seaming .....	W. A. Wicks .....	105, 398
Cans, sheet-metal, Top for .....	J. Britton .....	106, 991
Cans, Top-nozzle for .....	H. Miller .....	105, 713
Can, Tin .....	J. J. Burkert .....	101, 707
Cap and nozzle, Metallic .....	E. T. Covell .....	103, 988
Cap and spout for oil-can, Reversible .....	E. T. Covell .....	104, 275
Cap for coffin-nails .....	S. A. Barker .....	98, 733
Cap for fruit-jars .....	H. Wright .....	101, 074
Cap for horse-collar .....	J. F. Walsh .....	108, 071
Cap for metallic cans .....	G. H. Perkins .....	100, 186
Cap for plane-iron .....	C. N. Tuttle .....	108, 946
Cap for powder-boxes for domestic purposes .....	H. A. Bartlett .....	100, 234
Cap, Horse-collar .....	J. Sellars .....	102, 052
Cap, Horse-collar .....	D. Curtis .....	105, 917
Cap, Percussion .....	B. F. Woodside .....	105, 874
Capstan .....	J. Ericsson .....	98, 940
Capstan .....	D. N. B. Coffin, jr. ....	100, 859
Capstan .....	E. Buel .....	102, 088
Capstan .....	J. W. Riggs .....	107, 104
Caps to bases of bell-levers, Attaching .....	E. W. Brettell .....	105, 900
Capsules, Machine for embossing .....	W. Betts .....	107, 329
Cap, Traveling .....	J. F. Sargent .....	101, 383
Car, Aerial .....	A. P. Keith .....	100, 415
Car, Aerial .....	E. Oakes .....	106, 862
Car-axle box-cover .....	D. Cowley .....	110, 117
Car-axles, Apparatus for straightening .....	B. S. Skates .....	99, 014
Carbolic acid for preventing decay and mildew in sail-cloth, &c., Application of .....	W. A. Torrey .....	105, 142
Carbonate of soda, hydrochloric acid, &c., Manufacture of .....	H. M. Baker .....	108, 088
Carbonic acid, Apparatus for generating .....	B. Bates .....	101, 415
Carbonic acid, Apparatus for generating .....	W. H. Bates .....	110, 190
Car-brake pipes, Atmospheric .....	G. Westinghouse, jr. ....	109, 695
Carbureter .....	C. F. Dunderdale .....	100, 274
Carbureters on railroad-cars, Apparatus for forcing air into .....	C. F. Dunderdale .....	100, 737
Carbureting-apparatus .....	W. A. Simonds .....	105, 378
Carbureting-apparatus .....	J. Millward .....	106, 389
Carbureting-apparatus .....	M. W. Kidder .....	107, 268
Carbureting-apparatus, Gas .....	J. Gair .....	99, 769
Carbureting-attachment for gas-burners .....	J. H. Steiner .....	103, 844
Car, Coal .....	T. McCrory .....	104, 332
Car-coupling pins, Machine for rolling .....	W. Davis and J. White .....	100, 125
Card-cabinet .....	A. T. Woodward .....	104, 391
Card-clothing .....	A. W. Gates .....	104, 445
Card-clothing clamp .....	J. O. Lewis .....	98, 507
Card-grinder .....	J. S. Dronsfeld .....	102, 236
Carding-machine .....	G. Jaquith .....	103, 889
Carding-machine .....	G. Thresh .....	107, 204
Carding-machine, Grinding attachment for .....	A. J. Burke .....	104, 262
Carding-machines, Cleaner and grinder for .....	L. W. Boynton .....	110, 004
Carding-machines, Feeding-device for .....	W. H. Barbour .....	107, 751
Carding-machines, Feed-mechanism for .....	W. A. Lawton .....	109, 634
Carding-machine, Stop-mechanism for .....	C. W. Anderson .....	100, 247
Carding-machine teeth .....	W. H. Whitney .....	107, 842
Card-rack .....	C. F. Wilson .....	98, 831
Card-rack .....	L. H. Olmstead .....	100, 656
Car, Dumping .....	O. L. Smith .....	101, 057
Car, Dumping .....	T. Bootsman .....	104, 254
Car, Dumping .....	E. C. Hegeler .....	107, 683
Car, Dumping .....	A. J. Ballard .....	103, 313
Car, Dumping .....	E. C. Smeed .....	108, 400
Car, Dumping .....	W. Riley, jr. ....	108, 632
Car, Dumping .....	W. Merrington and N. Kirkwood .....	108, 810
Car, Dumping .....	S. D. King .....	109, 020
Car, Dumping .....	P. K. Dederick .....	109, 188
Car-hooks, Machine for bending and punching .....	D. G. Morgan .....	106, 188
Car-mover .....	S. Decker and P. Loucks .....	102, 357
Carpenters' squares, Machine for marking .....	A. M. Healy and C. H. Raymond .....	108, 479
Carpet .....	J. Cochran, jr. ....	100, 377
Carpet-beater .....	W. H. Hankinson .....	108, 589
Carpet-cleaner .....	R. Terry and F. W. Hafkemeyer .....	108, 651
Carpet-cleaning machine .....	D. A. Drew .....	99, 073
Carpet-cleaning machine .....	H. H. Lindhorst .....	104, 171
Carpet-duster .....	T. Ferry .....	106, 679
Carpet-fabric .....	W. Wallace .....	104, 232

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Carpet-fastener .....	B. W. Walker .....	102, 185
Carpet-fastener .....	J. H. Stanton .....	108, 200
Carpet-fastening .....	J. J. Märki .....	104, 864
Carpet-lining .....	J. R. Harrington .....	107, 682
Carpet-lining, &c., Fabric for .....	J. L. Kendall and R. H. Trested .....	103, 198
Carpet-lining, Manufacture of .....	W. A. Mauran .....	105, 960
Carpets, Compound for cleaning .....	L. Marks .....	110, 481
Carpet-stretcher .....	G. W. Story .....	101, 677
Carpet-stretcher .....	A. S. Richards .....	108, 938
Carpet stretcher and tacker .....	J. R. Bancroft and R. C. Bache .....	103, 410
Carpet-sweepers, Driving-gear wheel for .....	A. J. Knight .....	105, 223
Carpet-sweeping machines, Gearing for .....	G. F. Taylor .....	103, 939
Carpet-tack .....	T. A. Mitchell .....	101, 374
Carpet-tacking machine .....	F. H. Stauffer .....	102, 331
Carpet "underlie" .....	N. Edwards .....	105, 661
Car-pusher .....	R. Lane .....	107, 926
Car, Railway sleeping .....	J. S. Du Bois .....	103, 119
Car, Refrigerating .....	A. Booth .....	107, 217
Car, Refrigerator .....	T. L. Rankin .....	110, 394
Carriage .....	J. R. Höller .....	106, 817
Carriage .....	G. W. Ham .....	107, 252
Carriage .....	S. P. Graham .....	107, 360
Carriage .....	C. N. Dennett .....	109, 189
Carriage .....	C. Thomas .....	110, 606
Carriage and car wheels and axle-box .....	J. A. Maynard .....	105, 228
Carriage-axles, Device for oiling .....	J. Vanderpool .....	100, 342
Carriage-axles, Manufacture of .....	A. E. Smith .....	106, 086
Carriage, Baby .....	J. Higgins .....	103, 882
Carriage-bodies, Compound or rough stuff to be applied to .....	E. Scharnikow .....	106, 875
Carriage-bow .....	I. N. Topliff .....	110, 513
Carriage-bows, Method of forming stump-joints for .....	A. P. Casey .....	103, 423
Carriage-boxes and seats, Metallic corner-support for .....	O. H. Smith and W. Fisher .....	101, 172
Carriage-boxes and seats, Corner-support for .....	W. Fisher .....	107, 025
Carriage-button .....	C. H. Field .....	110, 558
Carriage, Children's .....	J. A. Crandall .....	98, 670
Carriage, Children's .....	W. E. Crandall .....	100, 121
Carriage, Children's .....	G. H. Mellen .....	101, 295
Carriage, Children's .....	R. G. Elder .....	102, 927
Carriage, Children's .....	G. F. C. Rosenthal .....	106, 286
Carriage, Children's .....	I. N. Forrester .....	103, 993
Carriage, Child's .....	I. N. Forrester .....	110, 561
Carriage-clip .....	L. A. Johnson .....	101, 467
Carriage-clip .....	F. B. Morse .....	108, 720
Carriage-clip .....	F. B. Morse .....	110, 581
Carriage-clip, Die for swaging .....	F. B. Morse .....	108, 283
Carriage-clips, Die for forging .....	F. B. Morse .....	109, 336
Carriage, cradle, swing, and baby-walker, Combined .....	W. H. Flanigan .....	100, 882
Carriage for children, Folding .....	T. G. Stagg .....	105, 505
Carriage, Gun .....	T. Coughlan .....	109, 181
Carriage, Hand-motive .....	J. Allgaier .....	100, 097
Carriage, King-bolt for .....	W. Clark .....	101, 227
Carriage, Landaulet .....	E. Wells .....	109, 981
Carriage, Poney phaeton .....	J. C. Ham .....	103, 605
Carriage-prop .....	L. Sawyer .....	101, 518
Carriage, Railway .....	A. R. Locke .....	106, 373
Carriages .....	F. A. Cowles .....	100, 864
Carriages, King-bolt socket for .....	F. B. Morse .....	103, 274
Carriages, Axle for .....	A. E. Smith .....	109, 681
Carriages, Clamping movable seat for .....	Sylvester W. Beach .....	109, 102
Carriages, Clip-bar for .....	F. B. Morse .....	110, 386
Carriages, Dash-board for .....	J. Bland .....	99, 140
Carriages, Dash-rail for .....	B. B. Noyes and O. G. Stratton .....	105, 362
Carriages, Double and single tree fastening for .....	J. Ingels .....	102, 940
Carriage-seats, Shifting-rail for .....	C. Disser .....	101, 956
Carriages, Elastic running-gear for .....	G. E. Garretson .....	103, 608
Carriages, Fifth-wheel for .....	W. A. Collins .....	104, 932
Carriages, Fifth-wheel for .....	H. Saylor .....	106, 731
Carriages, Fifth-wheel head for .....	R. R. Miller .....	100, 177
Carriages, Flap-fastener for the dasher of .....	R. Clingen .....	103, 142
Carriage-shackles, Machine for drilling .....	J. B. Clark .....	107, 875
Carriage-shackles, Process of forging .....	F. B. Morse .....	106, 190
Carriages, Hold-back for .....	J. Hunlock .....	99, 196
Carriages, Hubs for .....	N. Bryan .....	108, 411
Carriages, Leather for neck-yoke for .....	H. Sanders .....	110, 074
Carriages, Method of forming shaft-iron for .....	F. B. Morse .....	110, 385
Carriages, Motive-mechanism for .....	G. Kilner and F. H. Simmons .....	103, 895
Carriages, Motive-power for .....	L. Langdon .....	100, 643
Carriage, Spring .....	D. R. Gould and W. S. Wickham .....	107, 173
Carriage-spring guard .....	O. H. Wheeler .....	104, 239
Carriage-spring heads, Machine for milling .....	W. Evans .....	108, 013

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Carriage-spring heads, Manufacturing.....	W. R. Petrie.....	104, 194
Carriage-springs, Adjustable shackle for.....	J. Bullard.....	110, 006
Carriage-springs, Goose-neck for hanging.....	S. M. Wier.....	102, 999
Carriages, Runner-attachment for.....	J. W. Moore.....	98, 990
Carriages, Running-gear for.....	T. O'Brien.....	104, 634
Carriages, Running-gear for.....	J. B. Withey.....	110, 528
Carriages, Seat-fastening for.....	J. H. Fellows.....	105, 789
Carriages, Shaft-iron for.....	F. H. Morse.....	108, 928
Carriages, Sliding-seat for.....	R. F. Briggs.....	109, 377
Carriages, Spring-brace for.....	W. Evans.....	99, 867
Carriage, Stay for.....	G. G. Larkin.....	106, 595
Carriage-step.....	F. B. Morse.....	101, 150
Carriage-step.....	W. W. Knowles.....	105, 876
Carriage-step, Method of forming.....	W. W. Knowles.....	104, 040
Carriage-step.....	W. Schoch.....	99, 601
Carriages, Top-prop for.....	A. Searles.....	105, 985
Carriages, Top-rest for.....	J. Lewis.....	105, 097
Carriages, Wheel-gear for.....	A. Baxter.....	102, 079
Carriages, Whip-holder for.....	E. W. Scott.....	110, 503
Carriage, Three-wheeled.....	C. H. Barrows.....	104, 409
Carriage-top.....	M. T. Jackson.....	100, 295
Carriage-top fixture.....	N. B. Richardson.....	108, 831
Carriage-top, Folding.....	T. H. Wood.....	105, 237
Carriage-top, Molded.....	G. L. Swett and J. P. Lockey.....	109, 272
Carriage-top, Moving.....	O. E. Mallory.....	104, 803
Carriage-top, Shifting.....	O. E. Mallory.....	106, 947
Carriage-top, Shifting.....	O. E. Mallory.....	109, 528
Carriage-trimmings, rubber-coated, Manufacture of.....	J. W. Munson.....	104, 056
Carriage-wheels, Fastening.....	W. Elder.....	110, 557
Carriage-wheels on their axles, Method of securing.....	I. Bicknell.....	105, 298
Carriage-window.....	J. F. Dohan.....	110, 444
Cars, Apparatus for coupling.....	B. F. Randolph, jr.....	107, 623
Cars, Apparatus for moving.....	E. Springer.....	101, 789
Cars, Device for delivering mail-bags to.....	J. B. McLain.....	109, 233
Cars, Device for moving.....	J. Foreman.....	102, 388
Car-seal.....	J. Dewe.....	109, 394
Car-seats, Head-rest for.....	E. M. Judd.....	109, 823
Car-seats, Spring-cushion for.....	W. R. Hatch.....	108, 477
Cars, Journal-box for.....	E. Von Jeinsen.....	109, 159
Car, Sleeping.....	G. F. Morse.....	104, 485
Car, Sleeping.....	G. S. Koontz and J. B. Hill.....	106, 178
Cars, Propelling-apparatus for.....	J. Roy.....	110, 501
Cars, Signaling-apparatus for.....	C. Carr.....	105, 040
Car-starter.....	R. Bogardus.....	104, 411
Car-starter.....	J. Bevan.....	107, 330
Car-starter.....	D. A. Dickinson.....	108, 460
Car starter, Railway.....	C. B. Broadwell.....	105, 635
Car starter, Street.....	H. Welch.....	104, 673
Car, Stock.....	Z. Street.....	106, 837
Car, Stock.....	Z. Street.....	106, 838
Car, Street.....	J. E. Ridgeway.....	102, 435
Car, Street-railway.....	M. P. Turner.....	99, 732
Car, Street-railway.....	J. J. Gutierrez.....	103, 874
Car-track and operative-apparatus for mines.....	W. B. True.....	101, 115
Cart, Brick.....	J. Evans.....	103, 539
Cart, Manure.....	T. L. Cotten.....	106, 125
Cartridge.....	E. Gomez.....	99, 078
Cartridge.....	E. Gomez.....	99, 079
Cartridge.....	W. H. Smith.....	99, 721
Cartridge.....	N. G. Whitmore.....	104, 912
Cartridge.....	D. E. Williams.....	108, 543
Cartridge.....	R. R. Moffatt.....	110, 264
Cartridge-box.....	S. A. Day.....	98, 743
Cartridge-box.....	J. C. Ludlam.....	110, 379
Cartridge-cap extractor.....	J. Logan and D. W. Eldredge.....	110, 052
Cartridge-case.....	O. Schevenell.....	102, 051
Cartridge-case.....	S. A. Day.....	102, 375
Cartridge-case.....	T. J. Powers.....	103, 079
Cartridge-ejector.....	J. M. Marlin.....	101, 637
Cartridge-loading apparatus.....	F. A. Thuer.....	98, 529
Cartridge, Metallic.....	S. Newhouse.....	98, 995
Cartridge, Metallic.....	F. E. Boyd.....	99, 528
Cartridge, Metallic.....	E. Gomez.....	99, 666
Cartridge, Metallic.....	A. N. C. Gavard.....	102, 109
Cartridge, Metallic.....	R. J. Gatling.....	102, 675
Cartridge, Metallic.....	E. Martin.....	105, 348
Cartridge, Metallic.....	W. I. Page.....	109, 931
Cartridge, Metallic.....	R. R. Moffatt.....	110, 265
Cartridge-shell extractor.....	J. M. Marlin.....	99, 690
Cartridge, Shot.....	C. E. Snecider.....	102, 984



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Cartridge, Shot.....	R. R. Moffatt.....	110, 383
Cartridges, Percussion-primer for.....	R. R. Moffatt.....	110, 266
Car-truck, Street-railway.....	J. R., D. W., and J. Perry.....	104, 762
Cart-saddle.....	C. K. Marshall.....	103, 636
Cart-saddle.....	W. B. McClure.....	108, 614
Cart, wheelbarrow, and turnip-drill, Combined.....	A. M. Newland.....	104, 983
Car ventilator and refrigerator.....	W. E. Phelps.....	107, 716
Car-wheel, Changeable-gauge.....	J. Hamilton and G. F. Morse.....	108, 475
Car-wheels to axles, Securing.....	A. McLeod and G. G. Lobdell.....	103, 484
Car-wheels to different gauges, Means for adjusting.....	W. B. Snow.....	106, 737
Case for bottle and glass.....	J. Mathieu.....	107, 189
Case for scissors.....	D. R. Page.....	104, 760
Case for turbine water-wheels.....	J. O. Joyce.....	105, 608
Case-stand.....	A. De Pay.....	106, 921
Casing for boilers, steam-pipes, &c., Non-conducting.....	F. Y. Arnold.....	106, 105
Casings or tubes of oil-wells, Apparatus for cutting.....	P. H. Lawrence.....	105, 156
Casket, Flower.....	J. M. Hess.....	108, 592
Casket for jewels, &c.....	J. Mathieu.....	98, 785
Casket-handle.....	D. Leonard.....	98, 506
Cask-filler.....	D. Cope.....	103, 845
Cask for containing fermentable beverages.....	J. Hamilton and R. Paterson.....	100, 029
Cask for lager-beer.....	J. J. Schillinger.....	102, 716
Cask-gauging instrument.....	E. R. McKean.....	105, 352
Casks, Machine for pitching.....	R. Rattermann.....	104, 062
Casks, Vent for.....	W. Ascough.....	105, 764
Caster.....	G. E. Grosse.....	102, 253
Caster.....	J. Kintz.....	107, 507
Caster and spoon-holder combined.....	L. Evans.....	109, 602
Caster for billiard-tables and furniture.....	W. Reagan.....	104, 201
Caster for furniture.....	L. Bertsche.....	98, 912
Caster for trunk.....	M. Schwerin.....	108, 193
Casters for trunk.....	A. J. Sessions.....	108, 300
Caster, Furniture.....	F. G. Ford.....	103, 165
Caster, Furniture.....	J. B. Sargent.....	105, 374
Caster, Table.....	W. M. Smith.....	99, 965
Caster, Table.....	D. Sherwood.....	101, 169
Caster, Table.....	C. H. Latham.....	104, 743
Caster, Table.....	D. Sherwood, E. P. Woods, and G. D. Dudley.....	105, 731
Caster, Table.....	D. Sherwood and G. D. Dudley.....	105, 732
Caster, Table.....	D. Sherwood.....	108, 838
Casting auger gate-hinge.....	B. Roux.....	99, 712
Casting hollow cylinders.....	J. W. Brittin.....	99, 144
Casting ingots in groups.....	F. J. Slade.....	101, 389
Casting toothed gear, Chill for.....	R. T. Davis.....	102, 781
Cast iron and cast-iron articles into steel, Converting.....	R. A. Jackson.....	107, 781
Cast iron into steel, Converting.....	W. Harris and A. Woolever.....	101, 963
Cast-pipe elbows, Manufacture of.....	J. G. Weaver, jr.....	104, 908
Cast steel, Manufacture of.....	H. McDonald.....	101, 291
Catamenial sack.....	A. Dinsmore.....	105, 785
Cataract-mechanism for steam-engines.....	J. Storer.....	104, 226
Catarrh remedy or snuff.....	T. C. Scruton.....	100, 931
Cat-head anchor-stopper.....	W. H. Barker.....	109, 998
Cattle-food, Compound for.....	W. Marsden.....	103, 761
Cattle, Medicine for cure of diseases in.....	E. A. Wilder.....	104, 677
Cattle on railway-trucks, Apparatus for feeding.....	W. J. Bouser.....	104, 105
Cattle-poke.....	S. P. Clemons.....	102, 497
Cattle-stanchion.....	N. W. Moody.....	98, 467
Cattle-stanchion.....	J. D. Scott.....	106, 876
Cattle, Stanchion for.....	W. C. Gifford.....	102, 804
Caul for laying veneers.....	L. A. Johnson.....	102, 553
Caustic alkalis, Packing.....	W. H. Balmiau.....	110, 189
Ceiling, Fire-proof.....	F. Baumann and G. F. Letz.....	103, 963
Cement.....	D. Arndt.....	106, 911
Cement for artificial stone, Manufacture of.....	S. Sorel.....	100, 944
Cement for coating and protecting wood.....	H. M. Westman.....	108, 661
Cement for paving and building.....	J. E. Hover.....	107, 910
Cement for the manufacture of cement-pipe, Preparation of.....	J. W. Stockwell.....	105, 511
Cement, Roofing.....	J. T. Wilkinson.....	108, 666
Cement, Roofing.....	O. Porter.....	109, 246
Cement to be used in sewers and drains, and for constructing flues and other parts of buildings.....	J. Kleckner.....	100, 706
Cement, Walk, pavement, and road.....	C. Burgess.....	107, 756
Cement, Water-proof.....	T. S. Clark.....	105, 648
Center and lathe, Combined.....	A. J. Truxell.....	109, 079
Center-plate for stove-top.....	J. Thorniley.....	107, 566
Centrifugal-machine.....	S. S. Hepworth.....	104, 149
Cess-pools, vaults, privies, &c., Apparatus for cleaning.....	W. C. McCarthy.....	104, 866
Chain.....	J. Good.....	108, 473
Chain-clutch.....	H. Pitcher.....	110, 069
Chain-link.....	W. C. Short.....	105, 004

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Chain-link and bar	D. A. Pelonbet	108, 621
Chain-links, Machine for making	H. Reynolds	102, 711
Chain-links, Machine for making	J. H. Snyder	106, 419
Chain-links, Machine for welding	W. B. Hayden	107, 613
Chain or band	J. H. Doerr	99, 298
Chain-shackle	E. Bangs	99, 623
Chair	C. R. Long	98, 783
Chair	W. H. Joeckel	98, 973
Chair	H. Willard	101, 957
Chair	C. R. Long	110, 053
Chair	J. C. Zimmerman	110, 413
Chair, Adjustable	G. Wilson	107, 581
Chair, adjustable, Reclining	C. H. D'Arcus	98, 851
Chair and clamp, Railway	L. J. Smith	108, 402
Chair and furniture tips	F. H. Holton	107, 685
Chair and lounge	M. P. Harley	105, 677
Chair and lounge	E. Hagan	109, 202
Chair and lounge, Invalid	W. T. Eastes	106, 343
Chair and step-ladder, Combined	A. Liesche	106, 067
Chair and table, Child's	P. G. Beckley	98, 463
Chair-backs, Machine for scraping	E. S. French	108, 015
Chair, Barber and dental	M. Leidcker	102, 683
Chair, Barbers'	A. Abel	100, 487
Chair, bedstead, and crib	W. McGregor	103, 066
Chair-bottom	P. C. Ingersoll	99, 441
Chair, cane-seat, Construction of	C. M. Rohr	104, 207
Chair, Child's	A. H. Webster	104, 517
Chair, dental, Folding	C. M. Adams	104, 398
Chair, Dentists'	W. M. Butler	106, 463
Chair, dining, Children's	A. Smith	108, 526
Chair, Easy	W. C. Poppendieche	101, 764
Chair, Fan-rocking	G. R. G. Jones	101, 740
Chair, Folding	T. B. Comins	98, 743
Chair, Folding	A. W. Stewart	100, 209
Chair, Folding	J. C. Crummy and A. A. Parsons	100, 733
Chair, Folding	J. H. Travis	101, 186
Chair, Folding	F. Killian	101, 628
Chair, Folding	G. McAleer	102, 022
Chair, Folding	A. W. Stewart	102, 178
Chair, Folding	A. W. Stewart	102, 179
Chair, Folding	A. W. Stewart	102, 180
Chair, Folding	W. Morstutt	103, 358
Chair, Folding	F. M. Holmes	104, 851
Chair, Folding	M. Lechler	104, 965
Chair, Folding	F. M. Holmes	105, 079
Chair, Folding	A. M. Rodgers	105, 253
Chair, Folding	G. McAleer	105, 472
Chair, Folding	A. C. Boyd	105, 898
Chair, Folding	W. E. Cameron	105, 903
Chair, Folding	A. W. Stewart	106, 633
Chair, Folding	E. P. Moore and S. J. Anderson	107, 084
Chair, Folding	W. Morstatt and F. Kips	107, 525
Chair, Folding	J. Nicoli	107, 708
Chair, Folding	E. Bartels	108, 314
Chair, Folding	T. B. Comins, jr	108, 973
Chair, Folding	L. N. Dann	109, 876
Chair, Folding	F. Colton	110, 438
Chair, folding, Convertible	W. B. Kimball	101, 472
Chair, Folding or knock-down	J. K. Coolidge and N. H. Hill	107, 455
Chair-frame	W. M. Smith	110, 598
Chair, Opera	B. Koechling	99, 576
Chair, Printers'	A. J. Finch	99, 302
Chair, railway, Reclining	J. P. Curry	109, 808
Chair, Reclining	W. A. Bury	100, 011
Chair, Reclining	W. C. Hornfager and E. A. Warren	101, 463
Chair, Reclining	E. Bartels	108, 750
Chair, Reclining and extension	J. Runn	98, 934
Chair, Revolving, rocking, and reclining	G. Knell	100, 905
Chair, Rocking	O. Jensen	99, 445
Chair, Rocking	C. Grawitz	108, 255
Chair, Rocking	C. H. Hudson and J. Bowker	109, 011
Chair, Rocking and reclining	T. J. Palmer	102, 701
Chair, Rocking, and step-ladder	W. H. Cook	109, 180
Chair, Rocking or tilting	J. Lamb	107, 924
Chairs, Construction of	H. I. Seymour	103, 786
Chairs, Construction of	H. H. Evarts	100, 132
Chairs, Construction of	D. E. Teal	105, 515
Chairs, Construction of	D. E. Teal	105, 516
Chair-seat	W. G. Bulgin	103, 973
Chair-seat, Machine for manufacturing	E. S. Jackson	108, 147
Chair-seat, Metallic	S. A. Snyder	105, 993
Chair-seats, Device for manufacturing	O. A. Bingham	102, 212

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Chair-seats, Machine for grooving the frames of .....	G. A. Watkins .....	107, 135
Chair-seats, Material for .....	A. N. Elliott .....	101, 241
Chair-seats, Preparing raw hide for use in .....	B. F. Wright and J. Rowe, jr .....	105, 759
Chairs, sofas, &c., Method for securing the seats and backs of .....	L. Baker .....	104, 815
Chair-tip .....	E. Coogan .....	98, 926
Chamber-vessel .....	C. H. Berry .....	101, 419
Chamber-vessel .....	V. Rhodes .....	110, 226
Chamber-vessels, Earth .....	G. G. Baldwin .....	102, 750
Chameleon-whirligig .....	L. O. Franke .....	105, 792
Chameleotrope .....	S. W. Anderson .....	100, 248
Chandelier .....	T. Buckley .....	98, 469
Chandelier, Vapor .....	C. E. Smith and H. J. Rice .....	106, 629
Channeling-machine, Stone .....	E. G. Lamson .....	110, 376
Channeling-machine, Stone .....	F. C. Treadwell and E. G. Lamson .....	110, 404
Charcoal, Apparatus for cooling and saving .....	G. A. Jasper .....	101, 019
Check for gas-burners .....	J. H. Jennings .....	100, 634
Check-piece and shroud-yoke for ships' rigging .....	H. Townsend .....	100, 819
Check-rein attachment .....	A. Thayer and W. A. Hastings .....	104, 377
Check-rein connector .....	A. H. Rockwell .....	107, 547
Checks, bonds, &c., Hand-stamp for cutting .....	J. F. Cory and J. H. Brown .....	103, 146
Cheese, Apparatus for making .....	E. L. Yaucy and C. E. Dorman .....	108, 866
Cheese, Bandaging and boxing .....	J. Blood .....	102, 755
Cheese, Combined press for .....	C. C. Musselman .....	98, 702
Cheese-hoop .....	S. Wilson .....	107, 315
Cheese-hoop, Adjustable .....	W. P. Thomson .....	101, 184
Cheese-vat .....	W. H. Obitts .....	109, 541
Cherry-stoner .....	J. Merchant .....	102, 021
Cherry-stoner .....	C. A. Fisher .....	103, 317
Cherry-stoner .....	J. N. Webster .....	103, 802
Cherry-stoner .....	W. W. Kilbourn .....	107, 693
Chicken-coop .....	J. R. Achenback .....	109, 166
Chignon .....	M. M. Cohen .....	105, 914
Chill-bosh for boiling and puddling furnaces .....	T. Coates .....	103, 983
Chilled rolls, Casting .....	G. G. Lobdell and W. Stuart .....	110, 378
Chimney .....	F. Richardson .....	102, 042
Chimney .....	A. J. Sprague .....	107, 421
Chimney-attachment .....	A. H. Lapphear .....	107, 694
Chimney-cap .....	B. F. and J. G. Miller .....	107, 282
Chimney-cleaner .....	G. S. Knapp .....	98, 980
Chimney-cowl .....	L. N. Chapin .....	99, 162
Chimney-cowl .....	F. Villard .....	99, 933
Chimney-cowl .....	E. P. H. Capron .....	100, 372
Chimney-cowl .....	M. Lockhart .....	100, 422
Chimney-cowl .....	D. Hahn .....	101, 123
Chimney-cowl .....	N. Douglas .....	101, 443
Chimney-cowl .....	C. B. Barlow .....	102, 298
Chimney-cowl .....	C. W. Bache .....	105, 625
Chimney, Lamp .....	S. W. Fowler .....	98, 484
Chimney, Lamp .....	R. N. Eagle .....	98, 936
Chimney, Lamp .....	R. N. Eagle .....	98, 937
Chimney, Lamp .....	E. Jones .....	100, 637
Chimney, Lamp .....	S. W. Warren .....	102, 892
Chimneys and flues, Construction of .....	J. Kleckner .....	100, 705
Chimney-top .....	C. M. Reynolds .....	98, 800
Chimney-top .....	D. S. Robinson .....	101, 313
Chimney-top .....	M. E. Mead .....	109, 642
Chisel, Dovetailing .....	N. H. Robinson .....	103, 659
Chisel for cutting gains .....	H. Bigelow .....	106, 310
Chisel, Grooving .....	H. G. Terwilliger .....	100, 690
Chisel, Turning .....	R. P. Buttlles and S. Sweet .....	101, 981
Chocolate-drops, &c., Apparatus for the manufacture of .....	W. C. Murdoch and E. K. Haynes .....	98, 615
Cholera, Medical compound for .....	T. H. Hazard .....	100, 760
Chopper, Meat .....	L. Steigert .....	98, 812
Chord-bars, Die for making .....	W. Forshaw .....	109, 506
Chuck .....	S. P. M. Tasher .....	105, 860
Chuck .....	J. F. Thomas .....	108, 535
Chuck .....	M. Love .....	109, 434
Chuck for grinding crystals .....	J. S. Warner .....	98, 820
Chuck for holding pipes and tubes while being screw-threaded .....	W. T. Cole .....	106, 551
Chuck, Jewellers' .....	L. S. Hill .....	99, 191
Churches, &c., Turn-up seat for .....	J. P. Tibbits .....	110, 512
Churn .....	J. P. Nichols .....	98, 703
Churn .....	S. W. Bruce .....	98, 918
Churn .....	J. Chapple .....	98, 924
Churn .....	J. A. and G. C. Hanger .....	98, 958
Churn .....	J. B. Johnston .....	99, 206
Churn .....	F. Hamblin .....	99, 312
Churn .....	R. P. Wells .....	99, 612
Churn .....	J. W. X. Smith .....	99, 720

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Churn .....	H. H. Bigard, E. H. Kellogg, and N. A. Prentiss.	99, 819
Churn .....	N. Shelton .....	99, 960
Churn .....	F. Wegner and C. Schleeter .....	99, 985
Churn .....	H. Gardiner .....	100, 025
Churn .....	R. F. Ross .....	100, 076
Churn .....	C. P. Holmes and A. L. Howell .....	100, 292
Churn .....	J. N. Jacobs .....	100, 412
Churn .....	T. Baker .....	100, 711
Churn .....	G. C. Brown .....	101, 091
Churn .....	A. W. Foster .....	101, 453
Churn .....	T. R. Evans .....	101, 599
Churn .....	J. B. Schuette .....	101, 666
Churn .....	M. B. Atkinson .....	101, 810
Churn .....	W. F. Goodwin .....	101, 856
Churn .....	T. B. Stephens .....	101, 936
Churn .....	C. T. Anderson .....	102, 354
Churn .....	G. N. Palmer .....	102, 425
Churn .....	C. A. Boone .....	102, 481
Churn .....	J. L. Devol .....	102, 509
Churn .....	A. H. Elliott .....	102, 518
Churn .....	T. T. Fairchild .....	102, 523
Churn .....	W. H. Pennock .....	103, 364
Churn .....	N. S. Hazen .....	103, 612
Churn .....	I. E. Weston and A. Streeter .....	103, 863
Churn .....	J. S. Lewis .....	103, 898
Churn .....	H. B. McFall .....	103, 908
Churn .....	J. H. Ormsby and R. S. Horton .....	104, 191
Churn .....	H. Caslow .....	104, 267
Churn .....	F. M. Harris .....	104, 304
Churn .....	S. Van Meter .....	104, 800
Churn .....	C. A. Maltby .....	104, 972
Churn .....	S. G. Shanks .....	105, 262
Churn .....	J. Mayhew .....	105, 471
Churn .....	J. P. Meranda .....	105, 475
Churn .....	W. H. Curtin, and C. and W. Lammers.	105, 652
Churn .....	W. J. Wikoff .....	105, 751
Churn .....	J. R. Sapp .....	106, 079
Churn .....	R. T. McCormick .....	106, 599
Churn .....	F. M. Hindman and N. Hiatt .....	106, 695
Churn .....	H. Kuhlmann .....	106, 836
Churn .....	G. H. McGlothlen .....	106, 848
Churn .....	M. Gascon .....	106, 929
Churn .....	J. Moyers .....	107, 284
Churn .....	J. G. Talbot .....	107, 306
Churn .....	L. Dederick .....	107, 464
Churn .....	A. Ladd .....	108, 035
Churn .....	H. Saggan .....	108, 297
Churn .....	J. C. Richardson and L. Taylor .....	108, 631
Churn .....	T. Coffield and B. Egli .....	108, 969
Churn .....	B. J. Smith .....	109, 556
Churn .....	S. Risler .....	109, 759
Churn .....	C. Matheny .....	109, 919
Churn .....	J. W. Jordan .....	110, 047
Churn .....	J. Shappell .....	110, 296
Churn .....	J. O. Maccliskey .....	110, 616
Churn-dasher .....	J. Brewbaker .....	102, 084
Churn-dasher .....	F. Bosom .....	102, 758
Churn-dasher .....	G. W. McClure .....	103, 219
Churn-dasher .....	P. Edgerton .....	104, 127
Churn-dasher .....	L. T. Newell .....	104, 169
Churn-dasher .....	G. Heliker and A. Burlew .....	105, 074
Churn-dasher .....	J. M. Hill .....	105, 334
Churn-dasher .....	H. F. Bartlett .....	106, 453
Churn-dasher .....	W. H. Gorham and B. H. Williams .....	106, 575
Churn-dasher .....	J. Harris .....	106, 935
Churn-dasher .....	T. H. Weaver .....	107, 138
Churn-dasher .....	S. E. Bauder .....	108, 232
Churn-dasher .....	L. Scott .....	109, 061
Churn-dasher .....	F. Ogden .....	109, 654
Churn-dasher .....	R. Brown .....	110, 429
Churn-dasher .....	J. B. Mellor .....	110, 487
Churn-dasher crank-fixture .....	C. Blust and M. Harbster .....	100, 969
Churn-dasher, Metallic .....	O. Updike .....	102, 887
Churn, Oscillating .....	N. E. Wilson .....	105, 533
Churn power .....	R. N. Smith .....	102, 171
Churning-apparatus .....	J. P. Curtis .....	104, 710
Churning-apparatus .....	J. Letort .....	104, 968
Churns, Device for operating .....	E. R. Hall and W. H. Town .....	100, 753
Chute for delivering timber .....	J. W. Haines .....	107, 611
Cider, Compound for refining .....	O. Schaffer .....	102, 715

*Alphabetical list of inventions—Continued.*

Invention or discovery,	Name of patentee.	No.
Cigar-box.....	E. Henkel.....	105, 681
Cigar-bunches, Machine for making.....	W. Weis.....	109, 280
Cigar-cutting machine.....	L. S. Stimson by H. N. Stimson.....	109, 153
Cigar-machine.....	F. Meyer and H. Schild.....	98, 877
Cigar-machine.....	H. Schild and G. J. Prentice.....	98, 890
Cigar-machine.....	W. G. Ayres and S. L. Cole.....	99, 745
Cigar-machine.....	J. Allen and J. Fanning.....	105, 620
Cigar-machine.....	G. W. Tanner and F. D. Bliss.....	105, 859
Cigar-machine.....	S. Scholfield.....	106, 214
Cigar-machine.....	I. Ten Eyck and J. O. Reilley.....	107, 307
Cigar-machine.....	J. Lauritzen.....	107, 927
Cigar-machine.....	J. O. Reilley.....	108, 629
Cigar-pierce.....	H. N. Foster.....	100, 744
Cigar-punch.....	S. J. Beston.....	104, 250
Cigar-shield.....	G. E. Brinkerhoff.....	100, 850
Cigars, Machine for making.....	R. Neisch.....	110, 270
Cigars, Manufacture of bunches for.....	A. Pearl.....	103, 256
Cigar-tips, Forming.....	S. L. Cole.....	108, 331
Cigar-wrapping machine.....	G. W. Tanner and F. D. Bliss.....	105, 140
Cinnabar and other volatile ores, Furnace and condenser for reducing.....	R. F. Knox and J. Osborn.....	104, 323
Circuit-changer.....	W. L. Burton.....	104, 923
Circuit-closer for electro-magnetic burglar-alarm, Automatic.....	J. P. Snyder.....	107, 301
Circuit-closer for electro-magnetic railroad-signals.....	A. W. Platt.....	100, 442
Circular plates of metal, Beveling the edges of.....	W. H. Singer.....	109, 953
Circular-saw jointer.....	E. H. Corbin.....	109, 806
Circular-saw teeth, Device for spreading.....	W. H. Rudolph.....	107, 963
Circulating water-heater for steam fire-engines.....	H. V. Coleman.....	106, 782
Cistern influx-regulator.....	A. J. Conner.....	105, 306
Cisterns, Cut-off for.....	F. Fischer.....	110, 128
Clamp.....	J. Ladow.....	99, 212
Clamp.....	H. C. Bradley.....	99, 826
Clamp.....	G. D. Lambert.....	100, 642
Clamp.....	E. B. Hays.....	101, 126
Clamp.....	C. B. Canfield.....	102, 487
Clamp.....	J. J. Lebeau.....	104, 606
Clamp.....	O. Taff.....	104, 790
Clamp.....	L. Wharton.....	106, 900
Clamp.....	F. Glasser.....	107, 247
Clamp, Bedstead.....	T. B. Gregory.....	107, 774
Clamp-book, Portable.....	C. W. Holbrook and E. F. Butler.....	109, 213
Clamp, Clothes-line.....	T. W. Owens.....	105, 483
Clamp, Door.....	B. Moore.....	102, 574
Clamped mold for making lead-joints in pipe-connections.....	E. Gwyn.....	100, 394
Clamp, Floor.....	G. Wood.....	100, 700
Clamp, Floor.....	D. Nettleton.....	107, 527
Clamp for bridges.....	L. E. Truesdell.....	105, 868
Clamp for forming horseshoe-calks.....	J. Rhoads.....	99, 876
Clamp for holding staves.....	E. Doremus.....	98, 574
Clamp for making whips.....	J. P. Luther and S. K. Buck.....	104, 970
Clamp for setting rigging.....	J. W. Slaughter and J. W. Androvatt.....	102, 605
Clamp for stay-log.....	J. N. Lyman.....	100, 164
Clamping-machine.....	J. H. Humes.....	104, 315
Clamping or cutting off tubes and rods, Device for.....	J. W. Mahlon.....	109, 747
Clamp-nut for screws.....	R. White.....	105, 614
Clamp, Sash and door.....	G. H. Hall and L. D. Farra.....	98, 765
Clamp, Slate-frame.....	J. H. Coffin.....	102, 656
Clamp, Trunk.....	A. J. Sessions.....	108, 299
Clamp, Tubing.....	W. H. Downing.....	106, 563
Clasp for elastic band.....	A. Scheydecker.....	107, 550
Clasp for lightning-rods.....	R. Street.....	106, 426
Clasp for paint-brush.....	G. W. Hupp.....	105, 212
Clasp for securing whip-sockets to dash-boards.....	Z. A. F. Lofebère and J. H. Davis.....	100, 046
Clasp for trunks, &c.....	T. R. Dunham.....	99, 416
Clasp Whip-socket.....	A. Worden.....	107, 845
Clay-crusher.....	A. Hall.....	98, 764
Cleaning and ditching rice-fields, Machine for.....	S. M. King.....	108, 269
Cleaning and polishing coffee, Apparatus for.....	J. H. Brookmire.....	109, 805
Cleaning and preparing rags for the manufacture of paper, Apparatus for.....	W. E. Newton.....	102, 854
Clevis.....	T. E. C. Brinly.....	102, 654
Clevis.....	D. M. Castle.....	110, 200
Clevis and stirrups, Machine for bending.....	W. C. Kaiser.....	106, 172
Clevis for sled.....	J. Van Antwerp.....	109, 973
Clevis, Machine for making.....	J. S. Hall.....	107, 901
Clip for elliptic springs.....	W. Evans.....	99, 074
Clip for harness.....	C. M. Tripp.....	99, 731
Clip for harness.....	J. S. Hays.....	105, 262
Clock.....	T. Thompson.....	99, 261



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Clock, Balance-pendulum for.....	R. R. Ramsdell and G. A. Whitcomb...	108,390
Clock, Calendar.....	W. A. Terry .....	99,258
Clock-dials, Setting .....	G. Hills .....	105,077
Clock, Electric.....	V. Kimmer.....	98,593
Clock, Electric.....	V. Kimmer.....	98,594
Clock, Electric.....	S. A. Kenndy .....	99,321
Clock, Electric.....	E. Wilson .....	99,386
Clock-escapement.....	B. B. Lewis .....	106,843
Clock, Programme.....	S. F. Estell .....	98,678
Clocks, Alarm-attachment for.....	J. H. Davis .....	110,016
Clocks, calendar, Arrangement of the pendulum in.....	H. B. Horton .....	98,498
Clock, Striking-movement of.....	F. Kienast .....	108,362
Clock-work, Gauge for turning.....	H. F. Henderson and J. E. Ladd .....	110,460
Clod crusher and pulverizer.....	C. T. Ramsey .....	104,353
Clod-fender .....	D. O. Moore and F. Reid.....	98,989
Clod-fender .....	E. Harpster .....	109,511
Clod fender and cultivator combined.....	B. F. Neely .....	102,959
Clod-fender and pulverizing-attachment for shovel-plov.....	E. Lannay .....	103,203
Closet and bed .....	W. Kelly.....	102,012
Closet for cake.....	J. A. Higgins .....	101,618
Cloth, &c., Acid and water-proof composition for coating.....	H. W. Johns .....	102,824
Cloth and other fabrics, Compound for cleaning.....	F. T. Huntton.....	103,747
Cloth and paper fabric, Manufacture of combined.....	J. H. Newton.....	100,436
Cloth, Apparatus for marking .....	A. Thomas .....	109,636
Cloth, Apparatus for marking .....	A. Thomas .....	109,687
Cloth, Apparatus for sponging .....	I. A. Davis .....	105,182
Clothes-drier.....	B. S. Brown .....	100,114
Clothes-drier.....	R. Phillips .....	100,662
Clothes-drier.....	F. S. Nettleton and E. J. Fuller .....	101,153
Clothes-drier.....	J. V. Clark .....	101,712
Clothes-drier.....	J. C. Haines .....	101,999
Clothes-drier.....	L. A. Stave .....	102,059
Clothes-drier.....	H. Schryver .....	102,717
Clothes-drier.....	H. H. Kendrick .....	102,831
Clothes-drier.....	H. Bosworth .....	103,133
Clothes-drier.....	J. N. Valley .....	103,257
Clothes-drier.....	W. L. Brown .....	103,424
Clothes-drier.....	D. Morris .....	103,486
Clothes-drier.....	J. Briggs.....	103,712
Clothes-drier.....	L. M. Streeter.....	104,227
Clothes-drier.....	W. H. Buell .....	104,552
Clothes-drier.....	A. H. Patch .....	104,761
Clothes-drier.....	G. W. Richardson .....	107,199
Clothes-drier.....	A. Scheft .....	107,235
Clothes-drier.....	L. Cutting .....	107,763
Clothes-drier.....	W. A. Daggett .....	108,003
Clothes-drier.....	J. Emmert .....	108,575
Clothes-drier.....	A. O'Dell .....	108,818
Clothes-drier.....	J. and W. Gnau .....	109,200
Clothes-drier.....	J. Kaspar .....	109,219
Clothes-drier.....	W. N. and A. K. Moore .....	109,647
Clothes-drier.....	C. R. Anderson .....	109,860
Clothes-drier.....	I. Hogeland .....	110,137
Clothes-drier.....	J. W. Kenning .....	110,145
Clothes-drier.....	J. T. Elliott .....	110,347
Clothes-drier.....	E. B. Corby .....	110,551
Clothes-drier.....	W. Tredenick .....	110,607
Clothes-holder for clothes-line.....	M. V. Bulla .....	109,382
Clothes-line clamp .....	G. W. Wilbar .....	99,385
Clothes-line fastener.....	H. Ogborn .....	100,438
Clothes-line fastener.....	E. K. Elliott and U. J. Baxter.....	105,927
Clothes-line fastener .....	B. B. Herrick .....	109,733
Clothes-line holder.....	J. C. Rankin .....	100,803
Clothes-line holder.....	A. L. Hurtt .....	102,548
Clothes-line holder.....	J. Davis .....	103,155
Clothes-line holder.....	H. Browne .....	103,714
Clothes-line holder.....	C. A. Kalck .....	104,597
Clothes-line holder and stretcher .....	N. E. Buffington .....	104,419
Clothes-line operator.....	C. Barron .....	108,431
Clothes-line reel .....	D. D. Pugh.....	104,495
Clothes, Machine for washing and wringing .....	A. Clark .....	109,385
Clothes-pin .....	W. Wellington .....	100,345
Clothes-pin .....	I. W. Searles .....	104,654
Clothes-pin .....	G. K. Farrington .....	104,720
Clothes-pin .....	G. Bradley and N. A. Walker.....	109,580
Clothes-pin .....	W. Miller .....	110,263
Clothes-pins, Arbor for turning.....	B. B. and A. J. Ockington.....	104,988
Clothes-pounder .....	J. W. Norton .....	109,240
Clothes-washer .....	J. K. Dugdale .....	98,855

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Clothes-washer .....	J. K. Dugdale .....	98, 856
Clothes washer and drier .....	E. Rees .....	99, 594
Clothes-washer, Hand .....	P. Falarido and G. H. Snow .....	99, 870
Clothes-washer, Steam .....	M. T. Lamb .....	100, 156
Clothes-wringer .....	A. H. Spencer .....	99, 364
Clothes-wringer .....	J. G. Roth .....	101, 922
Cloth, Machine for fulling .....	R. Hunt .....	105, 082
Cloth-measuring apparatus .....	S. B. Lockett .....	100, 425
Cloth-measuring apparatus .....	T. M. Brintnall .....	101, 979
Cloth-measuring machine .....	T. Wheedan and T. Tribe .....	107, 205
Cloth-stretching machine .....	S. H. Austin .....	101, 811
Clover-hulling attachment to thrashing-machines .....	J. H. Golladay .....	103, 347
Clover-machine .....	D. Whiting .....	103, 806
Club-feet, Apparatus for treating .....	G. B. Wood .....	106, 907
Clutch for machinery .....	J. E. Plummer and J. P. Noyes .....	109, 450
Clutch-gearing .....	E. Nicholson .....	108, 817
Coal-barge .....	L. F. Frazee .....	110, 120
Coal-barrow .....	P. K. Dederick .....	102, 376
Coal, Colorado and similar, Using for metallurgical operations.	W. J. Lynd .....	98, 607
Coal-digging apparatus .....	W. Ward .....	101, 792
Coal for smelting ore, Preparing .....	W. J. Lynd .....	93, 606
Coal-hod .....	W. Wilson .....	102, 639
Coal-hod, Screen .....	N. S. Nichols and R. Weaver .....	100, 791
Coal-hole cover .....	L. A. Kimberly .....	109, 422
Coal-loading device .....	J. F. Logan .....	93, 782
Coal or other minerals, Machinery for moving .....	J. Eastburn .....	104, 093
Coal-scuttle .....	F. L. Blair .....	98, 661
Coal-scuttle .....	S. J. Anderson .....	102, 292
Coal-scuttle .....	C. Hodgetts .....	103, 615
Coal-scuttle .....	H. S. Reynolds .....	104, 835
Coal scuttle and sifter .....	W. Hazlett and W. H. Flanigan .....	102, 679
Coal-tar, Composition made from .....	F. M. Hillstream .....	103, 614
Coal, Treating acid tar from .....	G. Chevrier .....	106, 915
Coal and hat rack, Folding .....	J. H. Monce .....	107, 080
Coating for steam-pipes, boilers, &c .....	W. T. Kosinski .....	107, 387
Coating tacks and nails with copper .....	H. W. Wright .....	106, 977
Coating the interior of pipes, tubes, &c., with silver or other metal .....	D. Parmelee .....	108, 510
Coat-pattern, Adjustable .....	G. P. Sweezy .....	109, 076
Coat-sleeves, Device for closing the ends of .....	H. F. Herkner .....	103, 816
Cock .....	T. H. Thayer .....	106, 093
Cock .....	J. W. Trafton .....	106, 237
Cock, Angle-valve .....	J. H. Davis .....	99, 650
Cock, Basin .....	C. A. Newton .....	119, 387
Cock, Check-valve .....	J. H. Davis .....	99, 652
Cock, Compression .....	J. Powell .....	99, 001
Cock, Confluent .....	J. H. G. Hawes .....	103, 329
Cock for carbureters, &c .....	S. Rust .....	109, 671
Cock for water-closet .....	H. Jones .....	98, 599
Cock, Globe-valve .....	J. H. Davis .....	99, 651
Cockle from wheat, Machine for separating .....	W. G. and H. T. Douglas and J. M. Reed .....	110, 124
Cock, steam-gauge, Revolving .....	D. Williams and E. Joseph .....	104, 090
Cocks, valve, made of cast iron and subsequently annealed.	J. H. Davis .....	99, 653
Cod-liver and castor oils, Manner of treating .....	G. W. Fox .....	107, 244
Coffee and tea steeper .....	J. B. Wakeman and A. M. Bush .....	103, 946
Coffee, &c., Apparatus for polishing .....	J. T. Randall .....	102, 591
Coffee, Apparatus for cleaning and polishing .....	J. H. Brookmire .....	109, 865
Coffee-cleaner .....	S. G. Taylor .....	101, 180
Coffee cleaner and polisher .....	H. C. Lockwood .....	99, 215
Coffee-cleaning machine .....	J. W. Brady .....	100, 492
Coffee-cleaning machine .....	J. W. Brady .....	100, 493
Coffee-cleaning machine .....	W. H. Elton .....	102, 519
Coffee, Machine for polishing .....	C. C. Warren and J. B. Baldy .....	109, 978
Coffee, Machine for washing and cleaning .....	S. Thompson .....	108, 407
Coffee or tea pot .....	E. B. Manning .....	105, 584
Coffee-polisher .....	E. J. Codd .....	105, 175
Coffee-pot .....	G. Holto .....	99, 438
Coffee-pot .....	S. Mento .....	100, 544
Coffee-pot .....	J. F. Fitch, B. G. Devoo, and R. W. B. McLellan .....	100, 880
Coffee-pot .....	J. P. Williams .....	101, 336
Coffee-pot .....	S. T. Savage .....	101, 517
Coffee-pot .....	J. Dodge .....	105, 051
Coffee-pot .....	W. Funk and G. W. Port .....	106, 572
Coffee-pot .....	L. Hildenbrand .....	109, 901
Coffee-pot attachment .....	M. D. Graff .....	99, 068
Coffee-pot strainer .....	G. A. Barron .....	110, 420
Coffee, Process for cleaning and polishing .....	C. C. Warren and J. B. Baldy .....	104, 483
Coffee-roaster .....	H. M. Gilbert .....	107, 771

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Coffee-roaster .....	N. Linden .....	109, 228
Coffee-roaster .....	N. Davis .....	110, 017
Coffee, tea, and spice can .....	J. M. Earle .....	110, 125
Coffee, tea, &c., Apparatus for making extracts and decoctions from .....	L. Brauer .....	100, 849
Coffin .....	W. G. Alger .....	98, 730
Coffin .....	T. M. Taylor .....	101, 181
Coffin .....	I. C. Shuler .....	105, 377
Coffin .....	J. E. Cox .....	107, 164
Coffin, Corpse-preserving .....	J. Y. Black .....	110, 337
Coffin-fastening .....	W. Hamilton .....	104, 730
Coffin-handle .....	J. S. Ray .....	100, 445
Coffin-handle .....	A. B. Bailey .....	107, 212
Coffins, Lifting-handle for .....	T. M. Taylor .....	104, 899
Collar .....	M. G. Emery and M. C. Fuller .....	105, 422
Collar and cuff box combined .....	J. C. Bauer .....	108, 315
Collar and hame for harness .....	J. H. Ferguson .....	100, 022
Collar and hames .....	J. L. Wooden .....	100, 701
Collar and hames .....	W. O. Brien and H. Wentworth .....	101, 303
Collar for attaching cow-bells .....	T. H. Body .....	102, 756
Collar for circular saws .....	J. R. Heald .....	109, 898
Collar, Fur .....	J. H. Kappelhoff and S. Rauh .....	105, 340
Collar, Horse .....	J. L. Van Wert .....	98, 722
Collar, Horse .....	A. Ducastel .....	100, 381
Collar, Horse .....	H. Sanders .....	101, 515
Collar, Horse .....	G. Horter .....	101, 619
Collar, Horse .....	R. Humphrey .....	101, 623
Collar, Horse .....	J. Englaender .....	104, 000
Collar, Horse .....	W. Kaves .....	104, 035
Collar, Horse .....	J. Englaender .....	105, 443
Collar, Horse .....	L. B. Kenney .....	105, 580
Collar, Horse .....	C. K. Marshall .....	105, 831
Collar, Paper .....	E. E. Mack .....	101, 286
Collar, Paper .....	G. A. Goldsmith .....	101, 855
Collar, Paper .....	D. F. Smith .....	101, 932
Collar, Sleeping .....	L. Dederick .....	103, 025
Colloidion and its compounds, Process of coating objects with .....	J. A. McClelland .....	105, 823
Colloidion, Vial for filtering .....	D. H. Cross .....	104, 432
Coloring and preserving the hair, Compound for .....	G. Smith .....	99, 487
Coloring-matter from madder, Preparation of .....	T. Bristow .....	104, 259
Coloring-matter to be used in vulcanizing rubber .....	J. Halliday .....	99, 885
Colors for printing and dyeing, Manufacture and application of .....	A. Paraf .....	109, 341
Colors, Manufacture of, and their application to fabrics .....	A. Paraf .....	110, 277
Colortrope .....	O. Nicholson .....	108, 170
Colter .....	H. M. Skinner .....	107, 298
Columns, Rolled iron or steel .....	F. H. Smith .....	103, 380
Column, Wrought-iron .....	J. W. Murphy .....	110, 154
Comb .....	J. C. Read .....	104, 202
Comb-cleaner .....	C. E. Gibbs .....	102, 803
Comb, Curry .....	L. Knapp .....	100, 417
Comb, Curry .....	W. E. Lawrence .....	110, 576
Comber-boards, Mechanism for operating .....	J. S. Templeton .....	107, 979
Combination asbestos-filling for fire-proof safes and other structures .....	T. Hyatt .....	101, 263
Comb, Round .....	E. Brown .....	98, 844
Comb, Round .....	G. T. Lincoln .....	105, 957
Combs, Metal-backed .....	E. E. Warner, J. W. Walton, and R. Vine .....	105, 143
Compass for mining .....	J. Blomgren .....	108, 555
Compass, Marine .....	E. S. Ritche .....	105, 492
Compound and liniment, Medical .....	W. S. Crocker .....	106, 127
Compound, Detergent .....	W. Berry .....	100, 844
Compound, Disinfecting .....	L. S. Robbins .....	100, 327
Compound, Explosive .....	C. Dittmar .....	98, 854
Compound, Explosive .....	J. Hafenegger .....	110, 355
Compound, Flavoring .....	W. Zeigler and J. H. Seal .....	103, 364
Compound for bating and raising hides .....	G. W. Adler .....	99, 387
Compound for bating hides and skins .....	L. F. Robertson .....	110, 161
Compound for cleansing silk .....	K. Fries .....	102, 246
Compound for preventing incrustation in steam-boilers .....	G. Birks .....	100, 358
Compound for stuffing leather .....	J. Merrill .....	100, 652
Compound for ties, sidewalks, &c. ....	W. A. Battersby .....	103, 957
Compound, Lubricating .....	J. H. Smyser .....	101, 325
Compound, Lubricating .....	H. Grogan .....	106, 053
Compound, Medical .....	A. D. Willis .....	98, 535
Compound, Medical .....	W. R. Call and T. F. Griffin .....	98, 554
Compound, Medical .....	H. H. Grigg .....	98, 690
Compound, Medical .....	P. and P. Mays .....	98, 875
Compound, Medical .....	M. J. Hanson .....	98, 959
Compound, Medical .....	G. V. and J. A. Sheffield .....	99, 959

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Compound, Medical .....	E. D. Burrill .....	101, 094
Compound, Medical .....	P. Leo and L. Matthews .....	101, 279
Compound, Medical .....	H. C. S. Otto .....	191, 305
Compound, Medical .....	C. J. Eames .....	102, 788
Compound, Medical .....	G. H. Smith .....	102, 980
Compound, Medical .....	P. Becker .....	103, 543
Compound, Medical .....	J. T. Stewart .....	103, 675
Compound, Medical .....	G. C. Furber .....	104, 727
Compound, Medical .....	E. Myers .....	104, 753
Compound, Medical .....	W. C. Tait .....	104, 791
Compound, Medical .....	J. B. Haskins .....	105, 073
Compound, Medical .....	L. J. Battrill .....	105, 163
Compound, Medical .....	L. L. Gebhart .....	106, 573
Compound, Medical .....	A. A. Marsh .....	106, 846
Compound, Medical .....	W. M. Wilson and D. S. Denton .....	106, 905
Compound, Medical .....	H. W. Cloud .....	107, 877
Compound, Medical .....	W. W. Oglesby .....	108, 508
Compound, Medical .....	O. F. Harris .....	109, 895
Compound, Medical, for the cure of colic .....	J. A. McKinnon .....	101, 145
Compound, Medical, for cure of diphtheria .....	H. L. Sheffer .....	103, 512
Compound, Medical, for the cure of dropsy .....	J. Newton and I. Barfield .....	99, 464
Compound, Medical, from globe-flowers .....	J. S. Pemberton .....	100, 439
Compound or liniment, Medical .....	J. D. Love .....	108, 371
Compound or liniment, Medical .....	G. D. Field .....	100, 516
Compound or pill, Medical .....	J. P. Waddell .....	106, 239
Compound, Paint .....	E. Blakeley .....	100, 588
Compound, Roofing .....	F. C. Tegetthoff .....	100, 688
Compound, Roofing .....	J. V. Douglas .....	107, 232
Compound, roofing, Plastic .....	R. O. Benton .....	98, 911
Compounds, Medical, and apparatus for making the same.	P. Fahrney .....	110, 025
Compound steam-engine, Direct-acting .....	W. M. Henderson .....	101, 617
Compound, Street-moistening .....	M. Marcus .....	102, 567
Compound to be used as an article of diet .....	W. D. St. Clair .....	100, 081
Compound to be used as an article of diet .....	C. G. Bayler .....	100, 557
Compound to remove grease from cloth, silk, &c. ....	M. B. Kimm .....	100, 043
Composing-stick .....	A. F. Cloudman and G. W. Coffin .....	108, 451
Composing-stick .....	R. C. Young .....	108, 549
Composition for covering steam-boilers, and for other purposes.	J. Riley .....	108, 055
Composition for finishing wax-leather .....	P. Maguire .....	102, 565
Composition for molding from plaster-of-Paris .....	G. Schlueter .....	99, 355
Composition or filling for coach-painters .....	J. W. Tully .....	99, 610
Composition to be used for printing on surfaces .....	A. Farrar .....	100, 877
Compressed-air cylinder .....	G. W. W. Goodwin .....	100, 282
Compressing wood-tenons, Machine for .....	B. D. Sanders .....	101, 315
Computing-attachment for weighing-scales .....	H. D. Lathrop and A. Gay .....	99, 326
Concrete for pavement, &c. ....	G. H. S. Duffus .....	108, 693
Concrete for paving and roofing .....	E. Duempelman .....	109, 724
Condenser .....	F. Wegmann .....	106, 973
Condenser and lime-extracting heater .....	J. Huntington .....	100, 766
Condenser for gas-works .....	P. Munzinger .....	109, 142
Condenser for steam-pumps .....	W. Craig and H. L. Brevoort .....	109, 113
Condenser for stills .....	J. Harrison and C. Low .....	103, 326
Condenser for the manufacture of coal-gas .....	A. Babbett and W. W. Biuny .....	103, 824
Condenser, Gas .....	E. Thompson .....	103, 392
Condenser, Steam .....	J. Hout .....	102, 005
Condenser, Steam .....	T. L. Jones .....	102, 272
Condenser, steam, Air-heating .....	P. J. Rice and D. A. Scott .....	103, 206
Condenser, Steam-engine .....	H. Anderson .....	107, 743
Condenser, Surface .....	R. Lighthall .....	101, 892
Condiment or relish .....	W. F. Swasey .....	105, 514
Confectionery .....	L. E. Chase .....	100, 375
Confectionery .....	G. and C. B. Miller .....	108, 565
Confectionery for druggists .....	A. Seitz .....	109, 677
Conical and other tubes, Machine for rolling .....	C. Kewin .....	102, 132
Connecting fire-detector with the alarm .....	H. L. Brower .....	109, 292
Connecting pitmen to cutter-bars, Mode of .....	W. Green .....	99, 563
Connection for lead-pipe joints .....	I. Smith .....	102, 443
Conveyor-block .....	W. De Witt .....	102, 377
Cooking and evaporating, Apparatus for .....	T. J. Newby .....	108, 283
Cooking-apparatus .....	H. C. Berry .....	106, 457
Cooking-apparatus .....	J. Gallagher .....	107, 477
Cooking-utensil .....	J. A. Morrison .....	102, 031
Cooking-utensil .....	E. L. Packard .....	108, 385
Cooler, Milk .....	J. W. McMillan .....	104, 180
Cooler, Milk .....	D. F. Woodward .....	104, 392
Cooler, Milk and liquid .....	W. H. Gould .....	106, 811
Cooler, Water .....	A. B. Bussey .....	108, 443
Cooler, Water .....	J. H. Stone .....	99, 725
Cooler, Water .....	J. Rutter .....	102, 595

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Cooler, Water.....	W. S. Cobb.....	103, 718
Cooler, Water.....	G. R. Bowman.....	106, 113
Cooling and preserving, Apparatus for.....	D. E. Somes.....	100, 683
Cooling and preserving tank.....	D. E. Somes.....	103, 682
Cooling and refrigerating, Apparatus for.....	P. H. Vander Weyde.....	105, 639
Cooling-apparatus.....	C. F. Pike.....	99, 107
Cooling buildings and making ice, Apparatus for.....	W. S. Mason.....	104, 614
Cooling soda-water and other liquids, Apparatus for.....	A. D. Puffer.....	109, 942
Cope for casting car-wheels.....	A. Alling.....	110, 534
Coping for walls.....	J. Grindrod.....	100, 751
Copper, Coating tacks and nails with.....	H. W. Wright.....	106, 977
Copper, Extracting, from its ores.....	N. Haskell.....	101, 009
Copper, Manufacture of, and separating other metals therefrom.....	J. B. Elkington.....	100, 131
Copper-paint for ships' bottoms.....	T. F. Griffin and R. Tarr, jr.....	108, 474
Copper-pyrites, Treating.....	T. M. T. Du Motay.....	108, 462
Copy-book.....	J. D. Williams.....	102, 189
Copy-book.....	N. P. Beers.....	103, 965
Copy-books.....	J. Van Everen.....	102, 732
Cord-catch.....	C. C. Moore.....	102, 575
Cord-holder for windows, &c.....	G. S. Gladding.....	100, 614
Cord, Machine for covering.....	T. N. Dale and G. Kraink.....	107, 010
Cord-making machine.....	J. McIntire.....	99, 099
Core-barrel.....	R. Cartwright.....	102, 220
Cores for casting iron, glass, &c., Expansible.....	A. Balding.....	100, 585
Core for castings.....	J. Herald.....	110, 038
Cores, Machine for producing.....	S. J. Peet.....	100, 320
Cores, solid, Apparatus for making.....	S. J. Peet.....	100, 318
Cork-cutting machine.....	E. F. Harrington.....	101, 730
Cork-extractor.....	C. Gooch.....	99, 080
Cork-machine.....	E. O. Schartan.....	110, 076
Cork, Metal-capped.....	E. Street.....	102, 181
Cork-presser.....	J. Ewing.....	104, 841
Cork-screw.....	W. Dickson.....	106, 036
Cork-screw.....	J. A. Smith.....	109, 958
Corks, Machine for cutting.....	E. O. Schartan.....	110, 075
Corn and cob crusher.....	J. M. Mower.....	99, 933
Corn and cotton scraper.....	G. Milliorn.....	109, 334
Corn and cotton-seed planter and guano-distributor, Combined.....	S. L. Donnell.....	100, 990
Corn-cake, Machine for making.....	W. Manning.....	109, 529
Corn-coverer.....	I. N. Monroe.....	108, 717
Corn-dropper.....	J. L. Smith.....	103, 936
Corn-dropper.....	M. R. W. Caldwell.....	109, 584
Cornet and other wind-instruments.....	W. C. Fietz.....	105, 059
Corn, green, Process of preserving.....	W. L. Gilroy.....	98, 758
Corn harvester and husker, Combined.....	A. Smith.....	103, 197
Corn huller, sheller, and feed-cutter.....	T. Thomasson.....	109, 157
Corn-husker.....	N. Evinger.....	100, 740
Corn-husker.....	T. S. Smith.....	100, 941
Corn-husker.....	L. A. Aspinwall.....	101, 809
Corn-husker.....	D. F. Welsh.....	106, 436
Corn husker and sheller and grain thrasher and cleaner, Combined.....	J. W. Huntoon.....	107, 318
Corn husker and sheller, Hand.....	J. M. Gray.....	110, 565
Corn-husker, Hand.....	S. L. Bligh.....	106, 311
Corn-husking machine.....	E. H. Carver.....	103, 561
Corn-husking machine.....	T. J. Burgess.....	104, 693
Cornice, metallic, Construction of.....	J. M. Blackburn, C. L. Wood, R. K. Price, and C. A. Sheridan.....	101, 572
Cornice-mold.....	M. Meany, J. McGinnis, and W. Cunningham.....	101, 293
Cornice-moldings, Machine for making.....	C. L. Wood and C. A. Sheridan.....	101, 556
Cornice, Ornamental.....	T. McGeary.....	99, 930
Cornices, plaster, Device for molding.....	S. Ferris.....	107, 241
Cornice, Window.....	R. N. Hoffman.....	100, 763
Corn, Machine for husking.....	R. Warriner, J. H. Baker, and G. B. Slocum.....	104, 085
Corn, Machine for husking.....	P. Philip.....	106, 276
Corn, Machine for husking.....	J. Hood.....	107, 259
Corn-marker.....	J. B. Thomas.....	105, 865
Corn marker, planter, and cultivator, Combined.....	W. Stirk.....	100, 815
Corn picking and husking machine, Field.....	G. and C. Meader.....	110, 061
Corn-plow and grain-drill, Combined.....	C. Hollar.....	105, 575
Corn-popper and coffee-roaster.....	L. A. Warner.....	105, 550
Corns, bunions, &c., Implement for removing.....	C. L. Roorbach.....	110, 162
Corn-sheller.....	S. Field.....	98, 944
Corn-sheller.....	R. Pfeifer.....	98, 999
Corn-sheller.....	W. P. Patton and W. A. Middleton.....	99, 106
Corn-sheller.....	D. E. Field.....	99, 768
Corn-sheller.....	J. W. Ricker.....	102, 593



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Corn-sheller.....	A. B. Thompson.....	103, 941
Corn-sheller.....	J. R. Wolford.....	105, 872
Corn-sheller.....	G. W. Reisinger.....	107, 410
Corn-sheller.....	G. S. Coleman.....	107, 761
Corn-sheller.....	E. Jordan.....	107, 919
Corn-sheller.....	J. R. Hamilton.....	109, 315
Corn-sheller.....	G. W. Reisinger.....	109, 945
Corn-sheller and vegetable-slicer, Combined.....	J. P. Smith.....	102, 607
Corn-sheller, Hand.....	T. Weaver.....	101, 949
Corn-sheller, Hand.....	C. H. Pickering.....	103, 497
Corn-sheller, Hand.....	W. A. Middleton.....	105, 825
Corn-sheller, Hand.....	J. E. Finley.....	108, 126
Cornstalks, Preparing the pith of, for use in the arts.....	W. M. Bryand.....	102, 484
Corpse-preserver.....	H. Lee.....	103, 060
Corpse-preserver.....	E. F. Lenox and C. Eckhart.....	104, 607
Corpse-preserver.....	J. C. Naylor.....	105, 013
Corpse-preserver.....	S. Stockton and J. Schepler.....	107, 831
Corpse-preserver.....	H. V. Griffith.....	108, 350
Corpse-preserver.....	R. C. Andrus.....	109, 861
Corpse-preserving case.....	A. G. Reed.....	105, 363
Corrugated metal-plates, Machine for bending.....	A. Johnson.....	105, 805
Corrugating and molding sheet-metal, Machinery for.....	A. Johnson.....	99, 684
Corset.....	T. S. Gilbert.....	99, 664
Corset.....	D. H. Fanning.....	100, 278
Corset clasp and spring.....	P. H. Niles.....	110, 273
Corset-fastening.....	W. B. Cargill.....	99, 633
Corset-fastening.....	C. Schieck.....	110, 583
Corsets, Device for measuring, laying out, and forming.....	M. Williams.....	101, 337
Corsets, Fastening for.....	M. P. Bray.....	100, 970
Corset, Skeleton.....	D. H. Fanning.....	99, 871
Corset skirt-supporter.....	J. W. Brooks.....	103, 556
Corset skirt-supporter.....	J. W. Brooks.....	99, 146
Corset-spring.....	J. Hanauer and N. Sartor.....	104, 022
Corsets, Skirt-supporting hook for.....	D. H. Fanning.....	109, 309
Corsets, Steam-former for shaping and finishing.....	C. Heptonstall.....	106, 060
Cotton and other fabrics, Sizing.....	J. W. Speyer.....	103, 384
Cotton and other waste, Machine for picking.....	G. F. Palmer.....	99, 699
Cotton-chopper.....	W. Holt.....	102, 541
Cotton-chopper.....	R. C. Holt.....	104, 154
Cotton-chopper.....	J. A. Lutz.....	108, 918
Cotton chopper and cultivator, Combined.....	J. D. Dunn.....	100, 128
Cotton-chopper, Self-adjusting rotary.....	S. A. Jefferson.....	108, 358
Cotton-coated seeds, Process for separating the fiber from the husk in.....	T. Rose and R. E. Gibson.....	105, 729
Cotton-gin.....	S. R. Parkhurst.....	98, 705
Cotton-gin.....	R. H. Gwathmey.....	101, 610
Cotton-gin.....	R. McKenna.....	103, 638
Cotton-gin.....	J. McClough.....	103, 981
Cotton-gin.....	S. Z. Hall.....	105, 070
Cotton-gin.....	R. McKenna.....	108, 500
Cotton-gin feeder.....	J. Ralston.....	107, 102
Cotton-gins, Construction of horse-power for.....	J. M. Albertson.....	103, 821
Cotton-gins, Electro-plating with nickel the metallic parts of.....	L. Watrous.....	109, 475
Cotton-gin, Self-feeding.....	J. A. Chaufourier.....	101, 769
Cotton, Machine for combing.....	H. Conant.....	99, 641
Cotton, Machine for opening.....	W. C. Jillson and A. B. Palmer.....	110, 363
Cotton-opener.....	R. Kitson.....	107, 922
Cotton-picker.....	R. F. Cooke.....	101, 231
Cotton-picker.....	D. E. McRae.....	106, 601
Cotton-picker.....	W. Apperly.....	106, 022
Cotton-picker.....	B. I. Dreeson.....	108, 461
Cotton-picking machine, Electrical.....	R. F. Cooke.....	103, 986
Cotton-plant protector.....	A. Le Blanc.....	101, 028
Cotton-renovating machine.....	J. B. Lyons.....	110, 149
Cotton-scraper.....	D. G. Rittenhouse.....	103, 930
Cotton-scraper and chopper.....	N. M. Hale.....	109, 124
Cotton-seed and guano distributor.....	J. T. Graves.....	108, 349
Cotton-seed, Engine for separating fiber from husks of.....	T. Rose and R. E. Gibson.....	105, 728
Cotton-seed huller.....	J. Harrington.....	110, 134
Cotton-seed, Machine for hulling.....	A. J. Vandegrift.....	104, 799
Cotton-seed, Machine for hulling.....	C. E. Singer.....	105, 136
Cotton-seed, Machine for hulling.....	W. R. Fee.....	107, 349
Cotton-seed, Process of separating fibers from.....	J. Duval.....	105, 923
Cotton-sweep.....	T. E. C. Briuly.....	109, 491
Cotton-thinning machine.....	A. M. Greeson.....	101, 962
Cotton-waste, &c., Refining oil from.....	E. T. Jarrold.....	110, 469
Cotton-waste and other fibers, Cleaning, from oil, &c.....	H. M. Baker.....	98, 658
Cotton-waste for cleaning machinery, Preparing.....	A. Peple.....	99, 945
Coughs, &c., Compound for cure of.....	J. Cushions.....	106, 333
Coughs and colds, Medicine for.....	A. Young.....	102, 194

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Coughs, colds, &c., Compound for the cure of.....	W. H. H. Irwin .....	100, 039
Counter and show-case.....	L. F. Vienot .....	101, 790
Counter show-case .....	G. D. Leonard .....	101, 475
Countersink .....	A. Wheeler .....	101, 796
Countersink .....	S. E. Holland, jr .....	103, 461
Countersink .....	W. B. Shedd .....	108, 837
Countersink .....	D. F. Sutton .....	109, 154
Countersink .....	M. M. Pettes .....	110, 494
Countersinking the holes in butt-hinges, Machine for..	L. P. Summers .....	109, 851
Counter-spool, Self-winding .....	W. J. Fox .....	107, 031
Counter-steel, Folding .....	J. L. Young .....	105, 761
Coupler and buffer, Railway-car .....	P. G. Gardner .....	108, 698
Coupler, Car .....	P. Weatherbee .....	104, 670
Coupling-attachment for pianos .....	J. Clark .....	108, 685
Coupling, Car .....	C. F. Horbeck .....	98, 770
Coupling, Car .....	E. B. Keith .....	98, 775
Coupling, Car .....	W. W. Bell .....	99, 817
Coupling, Car .....	J. Whiteford .....	100, 092
Coupling, Car .....	T. Hess .....	100, 147
Coupling, Car .....	E. T. McKean .....	100, 173
Coupling, Car .....	H. S. Root .....	100, 192
Coupling, Car .....	W. M. Ingstrum .....	101, 018
Coupling, Car .....	J. Temple .....	101, 543
Coupling, Car .....	W. Wimer .....	101, 694
Coupling, Car .....	W. B. Parsons .....	102, 149
Coupling, Car .....	G. H. Jones and L. D. Boyce .....	102, 271
Coupling, Car .....	J. Coleman .....	102, 500
Coupling, Car .....	J. Van Steenberg .....	103, 108
Coupling, Car .....	N. E. Leaman .....	103, 207
Coupling, Car .....	O. P. Ives .....	103, 748
Coupling, Car .....	T. W. Defrees .....	103, 850
Coupling, Car .....	W. R. Baker .....	104, 698
Coupling, Car .....	W. J. Johnson .....	104, 462
Coupling, Car .....	A. and T. Beucus .....	104, 543
Coupling, Car .....	R. F. Wolcott .....	104, 678
Coupling, Car .....	J. C. Wrenshall .....	104, 679
Coupling, Car .....	S. P. Carl and A. Shute .....	104, 704
Coupling, Car .....	J. A. Mason .....	104, 750
Coupling, Car .....	J. B. Hards and W. Hodnett .....	105, 057
Coupling, Car .....	E. D. Thompson .....	105, 278
Coupling, Car .....	C. Markley .....	105, 470
Coupling, Car .....	M. B. Malott .....	105, 706
Coupling, Car .....	A. T. Morgan .....	105, 970
Coupling, Car .....	W. A. and J. M. Rex, jr .....	106, 274
Coupling, Car .....	W. R. Patton .....	106, 399
Coupling, Car .....	R. N. Allen .....	106, 407
Coupling, Car .....	J. H. Froman .....	106, 807
Coupling, Car .....	C. M. Hoag .....	106, 936
Coupling, Car .....	A. J. Prescott .....	107, 196
Coupling, Car .....	W. Walker .....	107, 571
Coupling, Car .....	B. R. Rose .....	107, 814
Coupling, Car .....	G. B. Terry and W. G. Hawley .....	107, 837
Coupling, Car .....	L. J. Smith .....	107, 971
Coupling, Car .....	L. A. Evans .....	108, 124
Coupling, Car .....	W. F. Grasler .....	108, 254
Coupling, Car .....	W. B. Snedaker .....	108, 404
Coupling, Car .....	G. W. Irish .....	108, 598
Coupling, Car .....	H. Blanchard, jr .....	109, 797
Coupling, Car .....	S. Mahurin .....	109, 830
Coupling, Car .....	J. R. Palmer .....	109, 932
Coupling, Car .....	A. F. Street .....	110, 088
Coupling, Car .....	J. C. Dearborn .....	110, 214
Coupling, Car .....	J. C. Morris .....	110, 269
Coupling, Car .....	W. H. Meadows .....	110, 580
Coupling, Carriage-pole .....	C. A. Moore .....	107, 082
Coupling for carriages, Shaft or pole .....	C. G. Dudley and J. Gulden .....	102, 515
Coupling for connecting the inlet-pipe to the retort of a gas-machine.	J. Butler .....	101, 224
Coupling for earth-boring augers .....	T. Orchard .....	109, 930
Coupling for hose and pipes .....	F. Shaller .....	101, 927
Coupling for journals, axles, &c .....	F. Burghardt .....	103, 295
Coupling for railroad-cars, Steam .....	S. A. Appold .....	106, 648
Coupling for railroad-cars, Steam-pipe .....	J. Conner .....	110, 114
Coupling for tumbling-shafts .....	S. C. Schofield .....	105, 259
Coupling for wheel-fellies .....	C. Cheney .....	105, 904
Coupling for wire-rigging .....	W. C. Ireland .....	106, 487
Coupling, Hose .....	T. L. Johnson and J. Fitzgerald .....	98, 774
Coupling, Hose .....	G. Sewell .....	99, 715
Coupling, Hose .....	C. H. Cushman .....	101, 403
Coupling, Hose .....	J. Edson .....	101, 841
Coupling, Hose .....	C. Powell .....	102, 038

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Coupling, Hose.....	G. Sewell.....	103, 785
Coupling, Hose.....	C. H. Cushman.....	104, 837
Coupling, Hose.....	C. Locher.....	110, 253
Coupling, Lead-pipe.....	J. Hoyt.....	93, 501
Coupling, Locomotive and tender.....	T. D. Simpson.....	102, 978
Coupling-pins, Machine for making.....	C. H. Williams.....	110, 179
Coupling, Pipe.....	J. V. Jepson.....	98, 597
Coupling, Pipe.....	E. Smith.....	98, 717
Coupling, Pipe.....	W. D. Alford and J. H. Pitkin.....	99, 744
Coupling, Pipe.....	J. R. Brown.....	103, 423
Coupling, Pipe.....	W. C. Allison.....	105, 290
Coupling, Pipe.....	R. Hoskin.....	105, 456
Coupling, Pipe.....	W. A. Lighthall.....	105, 817
Coupling, Pipe.....	L. A. Farjon.....	106, 041
Coupling, Pipe.....	G. M. McGowan.....	109, 332
Coupling, Pipe.....	G. C. Germain.....	110, 028
Coupling-pipe for heating cars.....	H. R. Robbins.....	99, 003
Coupling-pipe, Wrought.....	S. Vanstine.....	104, 905
Coupling, Pulley.....	J. E. Attwood.....	109, 709
Coupling, Railway-car.....	J. B. Vedder.....	93, 723
Coupling, Railway-car.....	R. Green.....	99, 562
Coupling, Railway-car.....	L. Buschmann.....	99, 632
Coupling, Railway-car.....	C. W. Benson.....	99, 818
Coupling, Railway-car.....	T. R. Herd.....	100, 146
Coupling, Railway-car.....	E. F. Snoider.....	100, 204
Coupling, Railway-car.....	J. W. H. Doubler.....	100, 272
Coupling, Railway-car.....	W. J. Evans.....	100, 515
Coupling, Railway-car.....	S. J. Anderson.....	100, 837
Coupling, Railway-car.....	A. Geiss.....	100, 999
Coupling, Railway-car.....	J. Blakeney.....	103, 120
Coupling, Railway-car.....	T. J. Delany.....	103, 156
Coupling, Railway-car.....	W. F. Grassler.....	103, 172
Coupling, Railway-car.....	G. C. Hugg.....	103, 618
Coupling, Railway-car.....	D. Hart.....	104, 024
Coupling, Railway-car.....	A. Herbert.....	104, 306
Coupling, Railway-car.....	J. C. Fisher and W. E. Kittridge.....	105, 791
Coupling, Railway-car.....	S. O. Campbell.....	106, 119
Coupling, Railway-car.....	J. W. Hess.....	106, 159
Coupling, Railway-car.....	J. H. Johnson.....	106, 367
Coupling, Railway-car.....	J. L. Devol and A. L. Peadro.....	106, 471
Coupling, Railway-car.....	R. Cowell.....	107, 008
Coupling, Railway-car.....	N. Morris.....	107, 950
Coupling, Railway-car.....	G. W. Wheat.....	107, 988
Coupling, Railway-car axle.....	D. F. Fetter.....	98, 681
Coupling-rod.....	F. J. Hanna.....	105, 199
Couplings for shafting.....	C. Bean.....	110, 422
Couplings, Ring for securing hose to.....	A. Schrader.....	105, 003
Coupling, Shaft.....	C. F. Du Vall.....	99, 657
Coupling, Shaft.....	T. Rowell.....	101, 047
Coupling, Shaft.....	H. F. Mann.....	103, 303
Coupling, Shaft.....	P. W. Reinshagen.....	104, 884
Coupling, Shaft.....	S. H. Whitmore.....	106, 755
Coupling, Shaft.....	S. H. Whitmore.....	106, 756
Coupling, Shaft.....	M. S. Bassett.....	106, 768
Coupling, Shaft.....	T. F. Taft.....	107, 978
Coupling, Shaft.....	W. M. Pratt.....	109, 344
Coupling, Shaft.....	W. Smeed.....	109, 846
Coupling, Shaft.....	P. W. Reinshagen.....	110, 590
Coupling-shaft, Universal.....	A. Keller.....	105, 696
Coupling, Sucker-rod.....	J. Odell.....	105, 235
Coupling, Sucker-rod.....	J. H. Beatty.....	108, 950
Coupling, Sucker-rod, for oil-wells.....	A. Good, jr.....	99, 997
Coupling, Thill.....	B. Hotchkiss.....	98, 499
Coupling, Thill.....	C. St. James.....	99, 025
Coupling, Thill.....	F. Norris.....	99, 465
Coupling, Thill.....	A. S. Harry.....	99, 890
Coupling, Thill.....	G. W. Price.....	100, 802
Coupling, Thill.....	C. Thomas.....	100, 951
Coupling, Thill.....	E. Yeiser.....	101, 560
Coupling, Thill.....	G. W. Dubuison.....	102, 099
Coupling, Thill.....	J. H. Gee.....	104, 015
Coupling, Thill.....	H. Z. Mast.....	104, 045
Coupling, Thill.....	P. S. Crawford.....	105, 178
Coupling, Thill.....	W. S. Geer.....	106, 687
Coupling, Thill.....	J. H. Ormsby.....	107, 404
Coupling, Thill.....	J. H. Jennings.....	107, 782
Coupling, Thill.....	W. W. Anderson.....	109, 431
Coupling, Thill.....	F. B. Morse.....	109, 927
Coupling, Thill.....	F. A. Jewett.....	110, 367
Coupling, Tongue and thill.....	J. I. Peck.....	98, 998
Coupling, Whiffletree.....	H. Killam.....	98, 779

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Coupling, Whiffletree .....	J. Ives .....	108, 357
Cover for chamber-vessel .....	W. Stockton .....	102, 877
Cover for cooking-utensil .....	L. B. Oviatt .....	107, 183
Cover for kettles and other vessels .....	E. K. Dean .....	102, 597
Cover for stove-pipe holes .....	J. A. Reed .....	107, 722
Cover for tables, floors, &c .....	A. Herzog .....	102, 213
Cover, Fruit-jar .....	T. A. Clark and H. C. Mascroft .....	107, 003
Covering for steam-boilers, &c .....	J. E. Sharp, E. Ainsworth, and F. A. Sabbaton .....	101, 527
Covering for steam-boilers, Non-conducting .....	W. Harris and W. Howell .....	102, 116
Covering for steps .....	C. E. Kemp and J. N. Pattison .....	98, 978
Cover for tea and coffee cups .....	J. Leach .....	110, 148
Cow-milker .....	L. O. Colvin .....	101, 589
Cow-milker .....	L. O. Colvin .....	103, 881
Cow-tail holder .....	J. Knight .....	103, 753
Crab for hand-hole plates .....	J. S. Hooton .....	105, 208
Crackers or meat biscuits .....	E. Greenfield .....	99, 880
Cradle, Automatic .....	S. G. Delano .....	100, 735
Cradle, Automatic .....	D. Alger .....	107, 148
Cradle or crib, Portable .....	D. M. Reynolds .....	109, 050
Cradle, Wire .....	L. Chevallier .....	98, 742
Cranberries, Machine for picking .....	J. P. Pritchett .....	101, 040
Crane, Yard and tank .....	L. Y. Ketcham and J. Taynton .....	99, 912
Crank-motion .....	M. A. Rowe .....	102, 323
Crank-pins, Machine for turning .....	H. S. Smith and W. D. Whitmore .....	105, 007
Crank-shafts, Hanging .....	J. M. Deugler .....	100, 004
Crate, Folding .....	L. A. Lindsey .....	100, 299
Crate, Folding .....	F. R. Van Dake .....	99, 977
Cream-strainer .....	H. Blake .....	109, 488
Crib and cradle .....	W. H. Earnest .....	104, 288
Crib and cradle, Folding .....	D. M. Reynolds .....	109, 925
Cricket and commode .....	J. C. Knowles .....	103, 754
Crimping-machine .....	S. W. Jamison .....	99, 906
Crimping-machine .....	W. Butterfield .....	100, 498
Cross-cut saw, Handle for .....	E. Andrews .....	104, 095
Cross-head shifter .....	C. E. Joyce .....	99, 686
Crucible-stand for fusing metals .....	J. C. McManus .....	104, 179
Cruet .....	T. H. Mead .....	98, 511
Crutch .....	P. R. Wimer .....	102, 901
Crutch .....	J. W. Tuttle .....	108, 303
Cue-cutting machine .....	J. Huber .....	102, 921
Cuff, Paper .....	S. A. Bemis, A. E. Forth, and J. W. Goodrich .....	108, 676
Cuff-supporter .....	T. Cogswell .....	100, 985
Culinary-apparatus .....	J. Van .....	106, 745
Culinary-apparatus, Steam .....	C. I. Paine .....	98, 881
Cultivator .....	B. S. Cox .....	98, 471
Cultivator .....	A. L. Chubb .....	98, 560
Cultivator .....	J. P. Letz .....	98, 604
Cultivator .....	B. F. Ward .....	98, 650
Cultivator .....	B. S. Hyers .....	98, 970
Cultivator .....	J. G. Kuapp .....	99, 208
Cultivator .....	D. G. Benner .....	99, 625
Cultivator .....	N. L. Isgrigg .....	100, 040
Cultivator .....	A. B. C. Nusbaum .....	100, 183
Cultivator .....	H. Carr .....	100, 499
Cultivator .....	H. Carr .....	100, 500
Cultivator .....	H. Carr .....	100, 501
Cultivator .....	W. Notman .....	100, 655
Cultivator .....	M. Bruner, jr. .....	100, 720
Cultivator .....	J. B. Skinner .....	100, 812
Cultivator .....	C. Bird .....	101, 216
Cultivator .....	G. B. St. John .....	101, 536
Cultivator .....	R. Wottring .....	101, 695
Cultivator .....	J. Bower .....	101, 976
Cultivator .....	H. S. Ross .....	102, 045
Cultivator .....	C. Alvord .....	102, 201
Cultivator .....	A. P. Clements and J. C. Nealey .....	102, 223
Cultivator .....	N. Werts .....	102, 631
Cultivator .....	T. Mabbett, sr. .....	102, 841
Cultivator .....	N. G. Webber .....	102, 993
Cultivator .....	H. Laird .....	103, 476
Cultivator .....	H. A. Adams .....	103, 537
Cultivator .....	S. H. Mitchell .....	104, 334
Cultivator .....	J. Adams .....	104, 399
Cultivator .....	J. W. Philip .....	104, 763
Cultivator .....	J. Lewis .....	105, 225
Cultivator .....	J. B. Moody .....	105, 358
Cultivator .....	M. Johnson .....	105, 460
Cultivator .....	C. L. Waffle .....	105, 745
Cultivator .....	I. Miller .....	105, 828

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Cultivator .....	S. B. Hoisington .....	106, 161
Cultivator .....	J. H. Tibbits .....	106, 235
Cultivator .....	J. L. Graham .....	106, 354
Cultivator .....	J. Gerber .....	106, 478
Cultivator .....	J. Root .....	106, 728
Cultivator .....	N. S. Shields .....	106, 733
Cultivator .....	B. F. Osborn .....	106, 864
Cultivator .....	R. L. Payne .....	106, 956
Cultivator .....	J. R. Little .....	107, 069
Cultivator .....	C. L. Whaite .....	107, 142
Cultivator .....	G. H. Smith .....	107, 416
Cultivator .....	J. H. Hamilton .....	107, 434
Cultivator .....	J. Neff, jr. ....	107, 526
Cultivator .....	L. Homrighouse .....	107, 777
Cultivator .....	H. N. Pease .....	107, 954
Cultivator .....	J. R. Little .....	108, 037
Cultivator .....	V. P. Harris .....	108, 260
Cultivator .....	C. P. Norton .....	108, 364
Cultivator .....	T. M. Reed .....	108, 392
Cultivator .....	H. M. Skinner .....	108, 398
Cultivator .....	J. Gerber .....	108, 471
Cultivator .....	D. C. Stover .....	108, 945
Cultivator .....	H. Howe .....	109, 129
Cultivator .....	I. Low .....	109, 229
Cultivator .....	J. Rebman .....	109, 247
Cultivator .....	B. F. Young .....	109, 363
Cultivator .....	J. B. Sexton .....	109, 554
Cultivator .....	A. Eshleman .....	109, 812
Cultivator .....	F. C. Jewell .....	110, 046
Cultivator .....	I. B. Mahon .....	110, 226
Cultivator .....	I. B. Mahon .....	110, 257
Cultivator .....	P. E. Smith .....	110, 362
Cultivator .....	R. H. Avery .....	110, 419
Cultivator .....	J. C. Carlow .....	110, 548
Cultivator and corn-drill, Combined .....	C. L. Wilcox .....	105, 225
Cultivator and digger, Potato .....	W. J. Avery and T. Laberteaux .....	100, 102
Cultivator and grain-drill, Combined .....	J. Giro .....	107, 359
Cultivator and grain-drill, Combined adjustable .....	T. Lunsdon .....	107, 126
Cultivator and harrow .....	E. T. Russell .....	106, 118
Cultivator and other teeth, Friction-block for attaching .....	W. Workman and J. Hitchcock .....	110, 163
Cultivator and plow, Cotton .....	J. R. Thomas .....	109, 558
Cultivator and roller, Combined .....	L. G. and E. E. Reed .....	104, 498
Cultivator and seeder, Combined .....	R. I. Robeson and W. Nash .....	108, 833
Cultivator and seeder, Combined .....	J. Lewis .....	109, 432
Cultivator, Corn .....	J. C. Erwood .....	100, 277
Cultivator, Corn .....	W. Gilman .....	107, 357
Cultivator, Corn .....	J. Clements .....	107, 760
Cultivator, Cotton .....	L. M. Ganong .....	105, 326
Cultivator, Cotton .....	W. J. Andrews .....	101, 077
Cultivator, Cotton .....	P. R. Leatherman .....	108, 150
Cultivator, Cotton and corn .....	M. Reed .....	108, 518
Cultivator, scraper, and chopper, Cotton .....	J. H. W. Young .....	110, 531
Cultivator, Finishing .....	B. Johnston .....	101, 466
Cultivator-frames, Attachment of, to wagon-axes .....	D. Fuller .....	108, 996
Cultivator, Hand .....	L. Duvall .....	99, 543
Cultivator-rake .....	J. T. Van Wyck .....	109, 082
Cultivator, Shovel-teeth for .....	T. Harding .....	105, 570
Cultivator, Sulky .....	F. Farnsworth .....	101, 720
Cultivator, Sulky .....	N. G. Blausen .....	105, 630
Cultivator-teeth .....	S. Beckwith .....	100, 713
Cultivator, Wheel .....	J. Eshleman .....	105, 039
Cultivator, Wheel .....	E. D. Hatch .....	106, 579
Cultivator, Wheeled .....	S. H. Dwight and W. B. Chambers .....	101, 240
Culvert, Iron .....	M. G. Freeman .....	109, 886
Cup and bell .....	T. Leach .....	105, 066
Cup, Oil .....	A. C. Ancona .....	101, 807
Cup, Oil .....	J. Ross .....	102, 973
Curculio, &c., Mode of protecting fruit-trees from .....	R. J. Walker .....	105, 526
Curculios, Apparatus for catching .....	M. M. Hooton .....	105, 333
Curd-agitator .....	B. G. Swain .....	107, 423
Curling and dressing hair, Device for .....	P. Ceredo .....	107, 596
Curling-iron .....	J. O. Bentley and J. Jackson .....	108, 234
Curling-rod for paper cigar-lighters .....	W. D. Young .....	101, 561
Current-wheel and condensing-engine, Combined .....	H. Spear .....	100, 946
Curtain and map fixture .....	J. W. Burns .....	99, 151
Curtain-cord tightener .....	J. E. Baum .....	106, 770
Curtain-fastening, Carriage .....	J. Adams .....	98, 538
Curtain-fixture .....	J. S. Lovejoy .....	98, 508
Curtain-fixture .....	J. Wyatt .....	98, 654
Curtain-fixture .....	T. Burgin .....	99, 837
Curtain-fixture .....	J. and W. Turnbull .....	100, 341



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Curtain-fixture.....	J. S. Whitney .....	102, 344
Curtain-fixture.....	A. H. Knapp and G. W. Bailey .....	102, 409
Curtain-fixture.....	F. Root .....	103, 084
Curtain-fixture.....	G. P. Fuller .....	103, 167
Curtain-fixture.....	J. Montgomery .....	103, 353
Curtain-fixture.....	J. H. Wilhelm .....	105, 871
Curtain-fixture.....	F. Root .....	106, 211
Curtain-fixture.....	R. I. Smith .....	106, 416
Curtain-fixture.....	A. E. Tripp .....	106, 637
Curtain-fixture.....	G. M. Thielcke .....	106, 890
Curtain-fixture.....	W. P. Yates .....	107, 747
Curtain-fixture.....	J. Doyle .....	107, 764
Curtain-fixture.....	E. G. Peoble .....	107, 956
Curtain-fixture.....	F. Root .....	108, 190
Curtain-fixture.....	W. E. Scranton .....	108, 734
Curtain-fixture.....	R. Beal .....	108, 752
Curtain-fixture.....	W. C. Clover .....	108, 761
Curtain-fixture.....	J. H. Wilhelm .....	109, 087
Curtain-fixture.....	J. L. Oliver .....	109, 241
Curtain-fixture.....	J. Stephens .....	109, 266
Curtain-fixture.....	M. H. Mosman .....	109, 539
Curtain-fixture.....	T. Stewart .....	109, 623
Curtain-fixture.....	J. G. Brothwell .....	109, 800
Curtain-fixture, Self winding and balancing .....	F. C. D. McKay .....	102, 142
Curtain-fixture, Spring .....	J. Shorey .....	105, 854
Curtain-holder .....	G. Wand, W. Yount, P. P. Reister, and A. L. Keeperts .....	99, 271
Curtain-roller, Extension .....	T. Van Wagoner .....	98, 649
Curve for use of draughtsmen, Adjustable .....	S. R. Kirby .....	103, 896
Cushion, Billiard .....	J. Berlieu .....	99, 393
Cushion, Billiard .....	J. Berlieu .....	104, 542
Cushion, mattress, &c. ....	T. H. O'Brien .....	108, 043
Cushion, Sleeping .....	E. G. Fast .....	98, 859
Cushions, mattresses, &c., Apparatus for diffusing vapors through. ....	W. Welch .....	99, 986
Cutlery .....	J. H. Nichols and W. Bower .....	102, 306
Cutlery, Attaching handles to .....	J. W. Gardner .....	103, 867
Cutlery, Fastening handles to .....	E. G. Ost .....	99, 785
Cutlery, Pocket .....	W. H. and G. W. Miller .....	103, 352
Cutlery, Pocket .....	D. R. Hundley .....	108, 596
Cutlery, Table .....	J. H. Nichols and W. Bower .....	99, 104
Cutlery, Table .....	E. G. Lamson .....	101, 139
Cutlery, Table .....	E. G. Durant .....	108, 463
Cutlery, table, Handle for .....	J. H. Nichols and W. Bower .....	100, 921
Cutlery, tools, &c., Handle for .....	J. T. Haviland .....	110, 358
Cut-off and safety-valve .....	A. Kendall .....	101, 886
Cut-off apparatus, Variable .....	T. May .....	109, 137
Cut-off, Cistern .....	J. P. Watson .....	100, 474
Cut-off for cisterns .....	F. Fischer .....	110, 128
Cut-off for steam-engine, Automatic .....	D. A. Woodbury .....	107, 746
Cut-off valve-gear and valve, Variable .....	W. Brown .....	102, 367
Cut-off valve-gear, Variable .....	N. K. Lynch .....	101, 634
Cut-off, Variable .....	J. Randles .....	101, 162
Cut-off, water, Automatic .....	D. F. Sweet .....	99, 727
Cutter and scraper, Vegetable .....	A. W. Paget .....	104, 192
Cutter, Bolt .....	H. L. Howard .....	102, 006
Cutter, Bolt .....	J. R. Brown .....	107, 438
Cutter, Bread .....	G. D. Goodsell and N. E. Babcock .....	103, 601
Cutter, Bung .....	N. J. Templeton .....	105, 606
Cutter, Button-hole .....	D. H. Cunningham .....	107, 009
Cutter, Button-hole .....	T. C. Bush .....	107, 332
Cutter, Cabbage .....	J. D. Schaub .....	101, 520
Cutter, Carpet-rag .....	W. Eberhard .....	107, 236
Cutter, Cheese .....	G. W. Cushman .....	99, 168
Cutter, Corn .....	H. V. Corbett .....	110, 014
Cutter, Corn-stalk .....	A. J. Nebergall .....	107, 090
Cutter, Feed .....	G. Parnell .....	98, 997
Cutter, Feed .....	W. H. Rosser and J. Stiver .....	99, 352
Cutter, Feed .....	C. H. Cain .....	102, 485
Cutter, Feed .....	C. R. Donner .....	108, 118
Cutter, Feed .....	F. E. Garner .....	108, 249
Cutter, Feed .....	W. Hutchins .....	109, 822
Cutter for dovetailing machines .....	D. Jordan .....	103, 750
Cutter for plows .....	G. E. Pykiet .....	110, 283
Cutter for wood-molding machines .....	D. Jordan .....	103, 890
Cutter, Grass .....	S. W. Sears .....	107, 632
Cutter, Green-corn .....	V. Barker .....	103, 543
Cutter, Harvester .....	J. M. Connel .....	105, 550
Cutter, Harvester .....	H. W. Mason .....	106, 948
Cutter, Hay and straw .....	A. C. Both .....	103, 552
Cutter-head .....	M. W. Clark .....	102, 222

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Cutter-head .....	G. E. Somers .....	105, 291
Cutter-head .....	D. W. Perry .....	109, 244
Cutter-head for planer .....	J. More .....	107, 943
Cutter-head for planing-machine .....	B. J. Barber .....	101, 701
Cutter-heads, pulleys, &c., Fastening for .....	J. Du Bois and E. Beugler .....	101, 238
Cutter, Meat .....	W. B. Heintzie .....	100, 035
Cutter, Meat .....	A. Nittinger .....	103, 360
Cutter, Meat .....	H. Seib .....	104, 363
Cutter, Meat .....	J. E. Smith .....	104, 516
Cutter, Meat .....	T. Hartley .....	107, 364
Cutter, Meat and vegetable .....	P. Bonfils and J. Grossman .....	107, 592
Cutter, Meat and vegetable .....	G. E. Bringman .....	110, 111
Cutter, Molding .....	T. J. Shannon .....	99, 716
Cutter, Molding .....	N. Jenkins .....	108, 026
Cutter, Oil-cloth .....	J. Ranch .....	99, 874
Cutter, Photographic print .....	J. Haworth .....	109, 615
Cutter, Rag .....	J. W. Barbour .....	98, 692
Cutter, Rattan .....	J. Murphy .....	104, 338
Cutter, Root .....	J. F. Smith and H. Underwood .....	104, 218
Cutters for tonguing and grooving .....	C. Brobst .....	105, 417
Cutter, Stalk .....	M. Claywood .....	107, 662
Cutter, Stalk .....	J. Lee .....	99, 328
Cutter, Stalk and kindling-wood .....	G. B. Hamlin .....	106, 482
Cutter, Straw .....	G. S. Garth .....	99, 308
Cutter, Straw .....	J. S. Jones .....	101, 741
Cutter, Straw .....	J. Ambrun .....	102, 470
Cutter, Straw .....	C. M. Weathers .....	102, 736
Cutter, Straw .....	N. O'Neil .....	104, 342
Cutter, Straw .....	H. Ogborn .....	105, 481
Cutter, Straw .....	S. Colahan .....	106, 329
Cutter, Straw .....	A. P. Massey .....	106, 707
Cutter, Straw .....	M. Tuell .....	108, 411
Cutter, Straw .....	E. A. Crallé, jr. ....	108, 974
Cutter, Straw .....	G. S. Garth .....	109, 197
Cutter, Straw .....	V. J. Shyock .....	110, 164
Cutter, Straw and feed .....	A. Werner .....	106, 975
Cutter-thill, Shifting .....	L. S. Clark .....	99, 535
Cutter, Tobacco .....	J. G. Dreher .....	103, 119
Cutter, Twine .....	G. C. Taft .....	99, 494
Cutter, Twine and thread .....	S. W. Adams .....	105, 872
Cutter, Vegetable .....	W. A. Boyden and C. J. Mann .....	100, 007
Cutter, Vegetable .....	G. Lutz, J. Schultheis, and M. Flor- entin .....	100, 049
Cutter, Vegetable .....	M. Girhard .....	100, 280
Cutter, Vegetable .....	H. P. Lauer and H. C. Reichard .....	102, 837
Cutter, Vegetable .....	N. Kipper .....	103, 057
Cutter, Vegetable .....	J. Lusher .....	105, 958
Cutter, Vegetable .....	F. Wagner .....	106, 529
Cutter, Vegetable .....	F. Curtis .....	102, 607
Cutter, Vegetable .....	H. Seib .....	108, 525
Cutter, Veneer .....	G. Koch .....	105, 092
Cutter, Veneer .....	W. Steele .....	101, 762
Cutter, Vine and weed .....	H. Lawrence .....	110, 477
Cutter, Weed .....	E. W. Walton .....	105, 529
Cutter, Wire .....	E. Murray .....	104, 872
Cutter, Wire .....	J. Johnson .....	106, 829
Cutting and shaping metals, Machine for .....	C. Van Haagen .....	110, 609
Cutting and shearing metals, Device for .....	I. Dubois .....	109, 192
Cutting, or lap-board .....	N. O'Donnell .....	107, 285
Cutting potato-roots, Plow for .....	H. M. Keith .....	107, 063
Cutting, scoring, and cornering paper for boxes, Ma- chine for .....	J. M. Keen .....	109, 630
Cutting screw-threads and drilling metals, Device for .....	J. W. Mahlon .....	109, 746
Cutting, stamping, and packing soap, Machine for .....	L. Beach and L. L. Beach, jr. ....	102, 907
Cutting, stamping, and packing soap, Machine for .....	C. Lehmann .....	102, 949
Cutting stone, Machine for .....	H. and J. L. Young .....	107, 847
Cylinder, Method of forming .....	H. Willard .....	103, 091
Cylinders and pipes, Molding-pit for casting .....	R. Cartwright .....	103, 560
Cylinders, pulleys, &c., Mode of balancing .....	W. Kitson .....	110, 247
D.		
Damaskeening and enameling, Electrophoto .....	A. G. Morvan .....	108, 011
Damper .....	J. P. Tuttle .....	100, 692
Damper .....	M. C. Burleigh .....	105, 167
Damper-regulator .....	J. H. Murrill .....	107, 948
Dampers or valves, Electro-magnetic regulator for .....	G. M. Sternbery .....	100, 462
Dasher for vehicles, Adjustable metallic .....	G. M. Peters .....	102, 315
Davit-rings, Self-releasing .....	A. Guild and W. H. Pierce .....	108, 353
Dead-eyes for wire-rigging .....	D. H. Chamberlain .....	100, 976
Dental apparatus for casting plates for artificial teeth .....	J. A. Loomis and C. F. Moll .....	102, 019

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Dental impression-molds, Construction of.....	W. C. Smith.....	105, 008
Dental-plate, Casting.....	J. U. L. Teemster.....	108, 245
Dentists' rest.....	R. F. Hunt.....	109, 411
Deposits from oil-wells, Removing.....	J. Dickey.....	106, 793
Depurator.....	W. Curran.....	100, 867
Depurator.....	S. C. Frink.....	105, 666
Derrick-boat.....	T. Saulpaugh.....	107, 630
Derrick, Hay.....	A. Barnes.....	101, 971
Derrick, iron, Portable.....	S. Rider.....	106, 408
Derrick-lamp, Safety.....	J. Dillen.....	102, 663
Derrick or hoisting-crane.....	H. S. Blood.....	103, 834
Desiccating substances, Apparatus for.....	B. R. Smith and J. C. Harris.....	98, 808
Desk.....	C. Wharton.....	106, 970
Desk, Advertising.....	H. W. Crotzer.....	102, 196
Desk and book-rack.....	G. Munger.....	98, 614
Desk and seat, School.....	M. L. Holt and I. C. Abbott.....	99, 895
Desk and seat, School.....	W. P. Erwin and T. A. Dugdale.....	100, 276
Desk and seat, School.....	W. H. Kline.....	100, 416
Desk and seat, School.....	J. D. Diffenderfer.....	100, 508
Desk and seat, School.....	W. Chase.....	100, 600
Desk and seat, School.....	J. Ingels.....	102, 941
Desk and seat, School.....	N. Johnson.....	109, 518
Desk and seat, School.....	W. A. Slaymaker.....	109, 770
Desk, bureau, and churn-power.....	J. J. Slater.....	108, 339
Desk, Folding.....	E. W. Gilles and J. Wendell.....	101, 118
Desk, Folding.....	H. E. Gillet.....	102, 249
Desk, School.....	A. E. Roberts.....	98, 801
Desk, School.....	A. J. Hull.....	99, 440
Desk, School.....	J. D. Browne.....	99, 832
Desk, School.....	W. P. Erwin and T. A. Dugdale.....	100, 275
Desk, School.....	J. Smith.....	100, 334
Desk, School.....	C. V. Sherwood.....	101, 670
Desk, School.....	J. F. Piehl.....	102, 317
Desk, School.....	C. H. Roberts.....	102, 713
Desk, School.....	J. F. Piehl.....	106, 403
Desk, School.....	W. E. Doyle.....	109, 304
Desk, School.....	E. Wilson.....	110, 101
Desk, school, Adjustable.....	C. H. Loomis.....	104, 472
Desks, seats, &c., Device for fastening, to floors.....	J. D. McAuliff.....	109, 031
Desk, school, Folding.....	E. Convers.....	104, 116
Desk, Writing.....	W. Hofer.....	99, 672
Desk, Writing.....	E. Scheel.....	108, 635
Desk, writing, Portable.....	W. Bothe.....	104, 255
Desulphurizing auro-pyrites and other ores.....	L. Sibert.....	107, 553
Desulphurizing ore.....	E. A. Burns.....	100, 497
Detaching-block.....	T. J. Harte.....	103, 455
Detaching-hook.....	J. W. Tuttle and J. Petersen.....	102, 007
Detector, Boiler-feeder and low-water.....	J. L. Starkey.....	109, 149
Detector for steam-boilers, low-water, Electro-magnetic.....	W. Duryea.....	106, 142
Deviation of ships' compass, Preventing.....	J. W. Girdlestone.....	108, 535
Device for cutting screw-threads.....	Z. S. Ogden.....	108, 933
Device for holding the cow's tail while milking.....	G. Tanner.....	104, 661
Device for securing the features of a corpse in place.....	A. S. Chesebrough.....	102, 490
Dial for travelers' watches, Adjustable.....	E. J. Hulbert and A. N. N. Aubin.....	99, 902
Diaper.....	A. M. Hughes.....	109, 410
Diaper-pin.....	I. W. Stewart.....	106, 422
Diaphragm stop-cock.....	W. E. Banta.....	107, 852
Die and plunger.....	J. H. Cole.....	99, 848
Die for bending mold-board, Adjustable.....	J. H. Franklin.....	107, 032
Die for cutting screw-threads on bolts.....	J. E. Weaver.....	104, 234
Die for drawing wire.....	J. D. Alvord.....	102, 468
Die for forging carriage-clips.....	F. B. Morse.....	109, 336
Die for forging carriage shackle-blanks.....	W. B. Smith.....	106, 225
Die for forging ears for carriage-spring heads.....	J. Evans.....	104, 292
Die for forging ears for carriage-spring heads.....	J. Evans.....	104, 440
Die for forging ox-shoes.....	H. Colburn.....	102, 372
Die for forging shear-bows.....	A. R. Bailey.....	101, 412
Die for forging vise-boxes.....	C. Konold.....	104, 165
Die for forming carriage-shackles.....	R. R. Miller.....	98, 610
Die for forming carriage-shackles.....	L. R. S. White.....	101, 952
Die for forming carriage-steps.....	L. Burns.....	103, 296
Die for forming eyelets.....	E. Tallman and N. G. Hossie.....	106, 938
Die for forming fifth-wheel heads.....	F. Van Patten.....	109, 781
Die for forming head for king-bolts.....	F. B. Morse.....	100, 178
Die for forming king-bolts.....	F. B. Prindle.....	102, 707
Die for forming perch-plates.....	R. R. Miller.....	100, 783
Die for forming shovels.....	H. O. Ganyard.....	100, 521
Die for forming shuttle-board spindles.....	A. A. Stone.....	99, 028
Die for forming shuttle-tips.....	A. A. Stone.....	99, 027
Die for forming sleeve-buttons.....	H. Ansley.....	101, 565
Die for heading bolts.....	F. Brusio.....	107, 160
Die for making chord-bar heads.....	F. J. Smith.....	101, 529

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Die for making chord-bars.....	W. Forshaw.....	109, 506
Die for making clinch-rings.....	S. Vanstone.....	100, 823
Die for making thrashing-machine teeth.....	C. H. Thompson.....	102, 332
Die for molding buttons.....	W. M. Welling.....	103, 660
Die for swaging carriage-clip.....	F. B. Morse.....	103, 283
Die for swaging wrench.....	T. Meikle.....	103, 502
Die for trimming king-bolts.....	F. B. Prindle.....	102, 708
Die or former for making double-shinned mold-board blank for plows.....	W. M. Watson.....	100, 825
Die-press.....	W. Burke.....	99, 149
Die-screw cutting.....	N. Nelson.....	103, 815
Dies for forming axles, Series of.....	J. Nicol.....	98, 878
Dies for forming T-bolts for whiffletrees.....	F. B. Morse.....	101, 149
Dies for forming the heads of king-bolts, Series of.....	R. R. Miller.....	100, 053
Dies for the manufacture of imitation straw goods.....	H. Loewenberg.....	101, 142
Dies, Machine for cutting.....	W. Newsham.....	104, 985
Dies made from aniline, &c., Removing from portions of fabrics.....	J. Lambert, jr.....	109, 025
Dies, screw-cutting, Die-plate for.....	W. T. Cole.....	110, 437
Dies, Tap for and mode of cutting.....	W. Newsham.....	104, 984
Die-stock.....	S. P. M. Tasker.....	105, 861
Digester for rendering lard, Steam.....	L. Thorn.....	98, 897
Digging and tamping pick.....	C. Carroll.....	103, 014
Digging-machine for agricultural purposes.....	A. L. Kennedy.....	109, 019
Dikes and embankments, Protecting against the ravages of animals, &c.....	S. Gardner.....	107, 608
Dining and ironing table and quilting-frame.....	T. Elkins.....	100, 020
Dinner-pail and lantern.....	N. C. Burnap.....	103, 558
Diphtheria, Medical compound for the cure of.....	H. L. Sheffer.....	103, 512
Diseases, Apparatus for treating by means of galvanism.....	J. R. Hatting.....	104, 587
Dish-fastener.....	C. R. Freet.....	105, 794
Dish-stand.....	H. C. Wilcox.....	101, 797
Dish-stand.....	W. F. Collier.....	106, 552
Dish-washer.....	M. S. Orton and P. B. Stiles.....	100, 657
Dish-washer.....	M. Hobson.....	101, 129
Dish-washer.....	G. A. Wells.....	104, 235
Dish-washer.....	R. and R. D. S. Filson and J. D. Cope.....	110, 559
Dish-washing machine.....	S. S. Tupper.....	105, 742
Disintegrated fibers, Drying.....	W. Adamson.....	109, 706
Disintegrator, Rotary.....	H. Duesh.....	108, 692
Distillation.....	H. B. Sinks.....	101, 388
Distillation, Apparatus for and process of.....	G. S. Williamson.....	107, 147
Distilling and evaporating extracts, saline solutions, &c., Apparatus for.....	T. Steers, jr.....	105, 381
Distilling and purifying liquids, Apparatus for.....	F. M. Young.....	103, 535
Distilling-apparatus, Combined.....	L. Wolff.....	101, 555
Distilling, Apparatus for.....	J. M. Weyand.....	102, 632
Distilling in vacuo, Method of.....	F. Gutzkow.....	103, 604
Ditcher.....	C. F. Woodruff.....	100, 231
Ditcher and grader.....	J. G. Sisson and L. Delana.....	100, 199
Ditcher and grader.....	J. H. Martin and C. D. Bradshaw.....	107, 393
Ditches, Construction of.....	T. K. Grube.....	106, 690
Ditching and grading machine.....	H. A. Winter.....	109, 091
Ditching and hedging, Machine for.....	W. Stacy.....	105, 858
Ditching and tile-laying machine.....	O. and W. M. Voorhis and S. H. Mapes.....	103, 801
Ditching-machine.....	G. W. Nevill.....	99, 102
Ditching-machine.....	J. Callihan.....	100, 597
Ditching-machine.....	W. Pierce.....	100, 664
Ditching-machine.....	S. P. McKelvey.....	101, 640
Ditching-machine.....	R. G. Forsyth.....	103, 595
Ditching-machine.....	M. C. and G. B. Higgins.....	104, 153
Ditching-machine.....	L. D. Noble.....	104, 631
Ditching-machine.....	J. A. Parsons.....	105, 364
Ditching-machine.....	A. J. Stephens.....	105, 995
Ditching-machine.....	U. Blickensderfer.....	106, 653
Ditching-machine.....	R. R. Osgood.....	107, 529
Ditching-machine.....	J. C. Osgood.....	107, 710
Ditching-machine.....	H. Vannatta.....	108, 217
Ditching-machine.....	S. F. Gard.....	108, 248
Ditching-machine.....	J. W. Roberts.....	109, 251
Ditching-machine.....	S. S. Wood.....	109, 480
Ditching-machine, Steam.....	A. J. Dye.....	101, 112
Ditching-plow and hedge-grader.....	D. Harmon.....	101, 729
Divider and calipers.....	G. W. Lane.....	108, 799
Dock, Dry.....	G. H. Ferris.....	104, 843
Dock, tide, Floating.....	W. Rickard.....	105, 725
Dome-top stove.....	P. D. Beckwith.....	103, 316
Door-bolt, Automatic.....	A. McKay.....	110, 486
Door-catch.....	R. V. Phillips.....	109, 342
Door-check.....	C. P. Young.....	109, 096

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Door check and holder.....	S. L. Hart.....	103, 044
Door-fastener and key-ring, Combined.....	B. H. Melendy.....	103, 068
Door for cannon-stove.....	C. Harris and P. W. Zoiner.....	99, 565
Door for street-cars.....	D. R. Hart.....	106, 362
Door-guard.....	C. W. Gschwind.....	103, 042
Door-guard, Elastic.....	D. E. Peck.....	102, 427
Door-hanger.....	S. P. Robinson.....	104, 064
Door holder or check.....	O. Sliker.....	109, 771
Door-knob.....	J. W. Grogan.....	100, 026
Door-knob.....	G. Jones.....	103, 749
Door-knobs and other molded articles, Manufacture of.....	J. J. De Barry.....	99, 241
Door-knobs to their spindles, Attaching.....	J. Evans.....	103, 590
Door-mat.....	A. P. Noyes.....	103, 916
Door-mat, Metallic and elastic.....	P. W. Neefus.....	109, 650
Door-retainer.....	C. T. Gravatt.....	100, 616
Doors, &c., Number-plate for.....	J. T. Smith.....	99, 019
Doors, &c., Spring-hinge for.....	A. Rankin.....	107, 813
Doors, &c., Spring-hinge for.....	A. F. Shiffing.....	107, 819
Doors and sash, Machine for laying out.....	S. C. Ellis.....	99, 866
Doors, Device for holding open.....	J. B. Sweetland.....	108, 534
Door-sill.....	J. Johnston and E. O. Marlow.....	104, 321
Door-sill, Adjustable.....	M. Armstrong.....	105, 623
Door, Sliding.....	J. Capron.....	100, 373
Door, Sliding.....	W. R. Waterhouse.....	101, 194
Door, Sliding.....	L. A. Cook.....	108, 763
Door, Sliding, for railway-cars.....	J. Bassler.....	105, 888
Door, sliding, Lock for.....	J. Davidson.....	108, 767
Door-spring, Rubber.....	J. B. Hayden.....	104, 027
Door-stop.....	W. H. Fahrney.....	103, 729
Door-stop.....	L. C. Wemple.....	109, 231
Door-stop.....	W. H. Fahrney.....	110, 026
Door-strip.....	J. W. Kramer.....	106, 835
Doubling, spooling, and like machines, Stopping-me- chanism for.....	J. Arnold.....	103, 277
Double-tree fastener.....	D. Werst.....	110, 095
Dough and cake mixer.....	T. Holmes.....	107, 050
Dough-kneader.....	J. H. Barr and J. H. Smith.....	105, 293
Dough-worker.....	W. R. Pool.....	103, 366
Dovetailing-machine.....	D. Jordan.....	99, 446
Dovetailing-machine.....	H. H. Bashore.....	100, 704
Dovetailing-machine.....	D. Jordan.....	102, 011
Dovetailing-machine.....	J. R. Van Epps.....	102, 069
Dovetailing-machine.....	H. H. Evarts.....	104, 001
Dovetailing-machine.....	E. Heath.....	104, 147
Dovetailing-machine.....	J. Dill.....	106, 922
Dovetailing-machine.....	C. S. Griffin and J. W. Wilkins.....	109, 123
Dovetailing-machine.....	J. P. Flanders.....	109, 194
Dovetailing-machine.....	J. B. Schmid.....	109, 674
Dovetailing-machine.....	J. B. Schmid.....	109, 675
Dovetails, Machine for cutting.....	W. E. Sibley.....	103, 670
Draft and hold-back attachment.....	W. H. Chamberlain.....	104, 557
Draft-service to plows, Adjustable.....	C. L. Jackson.....	109, 215
Draft to plows, Attaching.....	G. W. Kidwell.....	107, 692
Drag-rake.....	G. H. Hackett.....	98, 954
Drainage, Machine for the manufacture of composition pipes for.....	R. Skinner and R. Gaines.....	106, 290
Drain-tile.....	F. E. Scott.....	104, 213
Drain-tile machine.....	F. M. Mattice.....	101, 615
Drain-tile machine.....	H. F. Baker.....	109, 862
Drain, Underground.....	S. H. Warner.....	109, 474
Draught-attachment for horses.....	C. C. Cole.....	98, 563
Draught-bar for horse-cars.....	J. Trent.....	99, 730
Draught-cock.....	W. H. Bate.....	110, 334
Draw-bridge.....	T. W. Pratt.....	100, 065
Draw-bridge.....	N. Macneale.....	100, 910
Drawer for cabinet-furniture.....	L. Burnell.....	109, 110
Drawer for furniture.....	G. F. Joyce.....	102, 826
Drawer-handle.....	C. A. Stock.....	109, 964
Drawer-slide.....	J. L. Chapman.....	102, 489
Drawing-frame.....	T. S. Winn.....	107, 146
Drawing-frame.....	C. P. Leavitt.....	109, 430
Drawing-frame.....	G. Draper.....	110, 556
Drawing-frame for hemp, &c.....	G. Davis and J. R. Hoover.....	106, 130
Drawing-frame for hemp, flax, &c.....	C. Wall.....	99, 503
Drawing-knife.....	J. H. Atwater.....	98, 903
Drawing-knife.....	C. C. Barton.....	104, 539
Drawing liquids by compressed air, Device for.....	A. L. Webster.....	106, 003
Dredge-box.....	A. F. Tripp.....	106, 430
Dredge-box, cake-cutter, and grater.....	S. Cooke.....	102, 225
Dredging and excavating machine.....	W. A. Pearson.....	101, 157
Dredging-apparatus.....	C. A. Scanlan.....	102, 049



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Dredging-machine	O. Chanute and G. S. Morison	98,848
Dredging-machine	J. McClean	101,898
Dredging-machine	W. D. Robertson	103,373
Dredging-machine	D. S. Howard	104,594
Dredging-machine	R. R. Osgood	104,757
Dredging-machine	G. Mitchell	104,980
Dressing and furrowing millstones, Apparatus for	J. L. Norton	109,928
Dressing-bureau and bath-tub, Combined	J. E. Gilman	107,479
Dressing fence-pickets, Machine for	W. and J. F. Nuelle	110,586
Dress-protector	F. Wittram	101,203
Dress-shield	B. M. Hotchkiss	108,908
Drier	A. W. Cox and W. Gause	98,470
Drier	H. Garrett	99,182
Drier	M. P. Smith	99,488
Drier	T. S. Harrison	101,458
Drier	A. W. Cox	102,230
Drier	G. W. White and L. E. Wentworth	102,742
Drier	I. B. Kinkead	103,622
Drier	P. Mickel	104,333
Drier	J. E. Rice	106,205
Drier	M. P. Smith	107,417
Drier	D. Trowbridge and J. M. Jones	107,932
Drier	C. A. Moffat	108,616
Drier	J. P. Miller	109,234
Drier, Towel	S. E. Grout	99,668
Drill	A. Thompson	102,066
Drill and broadcast sower, Grain	J. Ingels	99,198
Drill and cultivator teeth, Securing	J. H. Thomas and P. P. Mast	105,387
Drill and holder	I. McLaughlin	103,374
Drill and seeding-machine, Combined	J. E. Buxton	106,320
Drill-feed, Grain	J. L. Ritter	99,238
Drill for seed-planters	J. F. Keller	105,810
Drill, Grain	M. Hayden	100,033
Drill, Grain	H. Pulse	100,585
Drill, Grain	J. P. Fulghum	100,998
Drill, Grain	J. H. Thomas	105,866
Drill, Grain	S. L. King and W. Ogden	106,594
Drill, Grain	J. Ingels	107,915
Drill, Grain	J. L. Ritter	103,294
Drill, Grain and seed	G. M. Thirkittle	107,980
Drill, grain, Feeder for	M. L. Nickels	106,950
Drill-guide	G. F. Case	101,095
Drill, hollow, Adjustable	C. E. Butler	102,090
Drilling and channeling machine, Stone	E. G. Lamson	110,375
Drilling and cutting screw-threads, Machine for	J. J. Grant	107,619
Drilling-apparatus, Submarine	S. Lewis	103,899
Drilling-machine	E. J. Worcester	99,803
Drilling-machine	J. Smith	103,515
Drilling-machine, Grain	J. Ingels	105,690
Drilling-machine, Hand	J. E. Hunter	101,466
Drilling, riveting, and watch-jewelry apparatus	C. Hopkins	98,497
Drill, Ratchet	J. Laubser	101,878
Drill, Rock	A. Blatchly	100,252
Drill, Rock	S. Lewis	101,746
Drill, Rock	W. Z. Hatcher and W. L. Lance	104,849
Drill, Rock	H. Osterkamp	106,197
Drill, Rock	C. Peck	110,280
Drill, Seed	J. B. Clemons	99,536
Drill, Seed and guano	A. Iverson, jr.	100,898
Drill, Self-feeding	J. H. Hanes	101,614
Drill, Stone	W. D. McClure	101,290
Drill-tooth, Grain	F. Villard	99,981
Drill, Wheat	J. Dillier	101,836
Drill, Wheat	J. F. Fisher	101,990
Drip-catch for umbrella	H. Keenan	108,798
Driven well	J. Harter	98,766
Driven well	I. Trump	99,373
Driven well-strainer	C. E. Macomber and C. E. Whelpley	100,426
Drive well-tube	D. A. Danforth	99,858
Drive well-tube	J. M. Mott	100,179
Drop-light gasaliers	C. Deavs	105,435
Drum, Heating	J. Reynolds	102,866
Drums, pulleys, and wheels, Double-gripping flanged	W. Kelsey	105,341
Dry-dock	W. Jones	102,554
Drying and evaporating, Apparatus for	C. Alden	100,835
Drying and pressing lard scraps, Apparatus for	A. K. Howe	108,798
Dry white-lead, Manufacture of	E. O. Bartlett	100,353
Duck-call	E. Fisher	102,799
Dumb-waiter	W. H. Elliott	103,103
Dumb-waiter for caissons	H. Flad	109,505
Dumping-apparatus	L. B. Stilson and J. G. Payson	109,776
Dumping-cage for mines, Safety	W. Z. Hutchner	104,848

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Dumping-machine .....	G. W. and W. S. Hough .....	104, 736
Duster and ventilator, Railroad-car .....	J. P. Curry .....	106, 786
Dust-arrester for railroad-cars .....	W. M. K. Thornton .....	101, 787
Dust-pan .....	F. L. Daniels .....	105, 315
Dust-ring for watch-frame .....	J. H. Flint .....	102, 527
Dust-ring for watch-frames .....	S. D. Engle .....	98, 677
Dye for coloring wool .....	G. W. Talbot .....	99, 496
Dyeing, Composition to be used in .....	F. Graupner .....	106, 479
Dyes, madder, Manufacture of .....	T. Bristow .....	100, 365
E.		
Ear-ring .....	G. Haberland .....	107, 679
Earth-chamber pail .....	H. Terry .....	105, 607
Earth-closet .....	W. R. C. Clark .....	101, 098
Earth-closet .....	J. A. Drake and W. R. C. Clark .....	101, 717
Earth-closet .....	G. B. Jewett .....	102, 128
Earth-closet .....	W. R. C. Clark .....	102, 494
Earth-closet .....	W. R. C. Clark .....	102, 495
Earth-closet .....	J. A. Drake .....	103, 029
Earth-closet .....	C. A. Wakefield .....	103, 260
Earth-closet .....	L. G. Clock .....	104, 270
Earth-closet .....	J. A. French .....	104, 296
Earth-closet .....	G. B. Jewett .....	104, 319
Earth-closet .....	R. A. Cannell .....	105, 039
Earth-closet .....	W. R. C. Clark .....	105, 045
Earth-closet .....	J. A. Drake .....	105, 053
Earth-closet .....	G. B. Jewett .....	105, 803
Earth-closet .....	J. Wood .....	106, 244
Earth-closet .....	J. A. Drake .....	106, 564
Earth-closet .....	J. A. Drake .....	106, 565
Earth-closet .....	J. A. Drake .....	106, 566
Earth-closet .....	C. Kieffer and J. R. Seeds .....	106, 593
Earth-closet .....	H. J. and J. W. Girdlestone .....	107, 358
Earth-closet .....	L. G. Clock .....	107, 451
Earth-closet .....	W. H. Newton .....	107, 799
Earth-closet .....	H. Sherman .....	108, 396
Earth-closet .....	R. A. Cowell .....	108, 885
Earth-closet .....	E. W. C. Vanderveer .....	109, 276
Earth-closet .....	G. W. Roberts .....	109, 667
Earth-commode .....	E. Woodruff .....	108, 950
Earthenware, Machine for molding .....	T. G. Green .....	108, 779
Earth-pulverizer .....	J. W. Pence .....	107, 287
Easel .....	G. Munger and J. W. Schermerhorn .....	101, 377
Eaves-trough and lightning-rod, Combined .....	J. W. Haukerson and W. Baker .....	108, 354
Eaves-trough fastener .....	M. Henney and W. R. Rager .....	108, 906
Eaves-trough hanger .....	R. A. Lucas .....	102, 412
Eaves-trough hanger .....	J. P. Abbott .....	105, 404
Eaves-trough hanger .....	J. J. Kauffman .....	105, 947
Eaves-troughs, Device for soldering .....	D. Asire .....	98, 835
Edge-plane, Shoemakers' .....	A. P. Hazard .....	107, 491
Egg and cake beater .....	H. S. Maltby .....	108, 498
Egg-beater .....	L. Williams .....	98, 533
Egg-beater .....	T. Earle .....	99, 173
Egg-beater .....	N. C. Miller .....	99, 337
Egg-beater .....	W. H. Haines .....	99, 683
Egg-beater .....	F. Krandelt .....	100, 155
Egg-beater .....	T. Williams .....	103, 811
Egg-beater .....	T. Marsh and J. Berney .....	104, 174
Egg-beater .....	T. Earle .....	105, 057
Egg-beater .....	G. K. Dearborn .....	105, 635
Egg-beater .....	T. Marsh and J. Berney .....	106, 182
Egg-beater .....	T. Marsh .....	107, 515
Egg-beater .....	T. Earle and G. K. Dearborn .....	107, 673
Egg-beater .....	D. M. Swartz .....	108, 203
Egg-carrier .....	W. J. Clark .....	100, 857
Egg-carrier .....	A. H. Bryant .....	101, 092
Egg-carrier .....	A. H. Bryant .....	101, 093
Egg-carrier .....	A. H. Bryant .....	104, 261
Egg-carrier .....	E. E. Joseff .....	106, 369
Egg-carrier .....	J. R. Asher .....	106, 983
Egg-holder .....	A. Brown .....	105, 901
Egg-packing .....	G. Ruston .....	102, 047
Eggs, Box for transporting .....	G. A. Wells .....	103, 111
Eggs, Preserving .....	J. Knapp .....	105, 342
Eggs, Preserving .....	J. Kaye, jr .....	109, 420
Ejector .....	J. Nixon .....	104, 986
Ejector .....	T. H. Schriber .....	103, 553
Ejector .....	H. Coll .....	110, 205
Ejector and steam-condenser .....	A. Barclay .....	106, 452

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Ejector, Insect-powder .....	S. Rose and N. Goldsmith .....	109, 762
Elastic fabrics, Apparatus for the manufacture of. ....	C. A. Ensign .....	106, 924
Elastic protector for horses' feet .....	W. H. Hall .....	100, 618
Electrical circuits for automatic transmitting instrument, Arrangement of.	G. L. Rutherford .....	108, 495
Electricity, Apparatus for lighting gas by .....	W. J. Morris and W. J. Reid .....	101, 491
Electric telegraph, Recording-instrument for the .....	W. Thomson .....	109, 688
Electro-deposition of copper and brass on iron and steel.	W. H. Wallen .....	103, 947
Electro-magnet .....	H. M. Paine .....	102, 856
Electro-magnet .....	H. M. Paine .....	103, 230
Electro-magnet .....	M. S. Frost .....	103, 440
Electro-magnet .....	W. W. Smith .....	106, 418
Electro-magnet, Construction of .....	H. M. Paine .....	103, 231
Electro-magnetic-apparatus for medical use .....	C. Reitz .....	107, 626
Electro-magnetic-apparatus for regulating valves and dampers.	G. M. Sternberg .....	105, 272
Electro-magnetic envelope for safes, vaults, &c. ....	E. Holmes and H. C. Roome .....	110, 362
Electro-magnetic machine .....	A. E. Dupas .....	99, 300
Electro-magnetic machine for medical purposes .....	L. Drescher .....	99, 414
Electro-magnet, Sector .....	H. M. Paine .....	103, 768
Electro-nasal douche .....	S. E. Adams .....	109, 367
Electroplating apparatus .....	H. W. Wright .....	101, 075
Electrotyping .....	J. A. Adams .....	102, 077
Elevating and bagging grain, Apparatus for .....	J. S. Hasbrouck .....	100, 887
Elevating-apparatus .....	G. G. Winans .....	99, 602
Elevating-apparatus .....	P. R. Berry .....	104, 102
Elevating-apparatus, Automatic water .....	H. H. Craigie .....	104, 934
Elevator .....	M. Hanford .....	99, 433
Elevator .....	M. L. Wyman .....	100, 832
Elevator .....	H. C. Stouffer .....	101, 407
Elevator .....	W. Hamilton .....	104, 731
Elevator .....	D. D. Hanson .....	105, 449
Elevator .....	A. Lawton .....	106, 841
Elevator .....	C. R. Foreman .....	107, 028
Elevator .....	T. H. Rudiger .....	107, 726
Elevator .....	C. W. Baldwin .....	109, 169
Elevator .....	G. McKenzie .....	109, 232
Elevator .....	G. C. Timpe .....	109, 275
Elevator .....	W. K. Marvin .....	109, 331
Elevator .....	G. Scott .....	109, 676
Elevator .....	F. Wicks .....	109, 787
Elevator and carrier, Water .....	A. A. and R. P. McPheeters .....	102, 955
Elevator and conveyor .....	T. J. Powell .....	103, 367
Elevator and conveyor, Combined .....	T. J. Powell .....	108, 183
Elevator and conveyor, Hay .....	C. A. Miller .....	105, 477
Elevator and conveyor, Hay .....	T. E. Haymond .....	110, 135
Elevator and conveyor, Portable .....	H. Crosby .....	108, 976
Elevator and distributor .....	T. Shanks .....	109, 950
Elevator, Balance .....	C. B. Sawyer .....	103, 375
Elevator, Bung .....	D. F. Fetter .....	110, 127
Elevator, Coal .....	A. S. Bailey .....	100, 103
Elevator for building-material .....	J. C. Bennett and D. N. Green .....	103, 414
Elevator for hoisting human beings, merchandise, &c. ....	C. W. Baldwin .....	99, 049
Elevator for merchandise .....	W. McNaughten .....	110, 382
Elevator for raising and stacking straw .....	S. Lewin .....	109, 523
Elevator for separators, Tailing .....	A. B. Farquhar .....	104, 094
Elevator, Hay .....	J. Linderman .....	107, 695
Elevator, Hay .....	R. Furnas .....	110, 224
Elevator, Hay and lime .....	A. and G. D. Thomas .....	102, 729
Elevator, Hod .....	J. Powers .....	105, 246
Elevator, Inclined-plane .....	T. B. Simonton .....	100, 811
Elevator, Kindling-wood .....	J. E. Kelsey .....	99, 910
Elevator, Pneumatic-liquid .....	J. P. Gruber .....	104, 301
Elevator, Railway water .....	A. Stivender .....	99, 369
Elevators, Apparatus for indicating the position of. ....	W. S. Auchincloss .....	104, 525
Elevator, Self-portable .....	H. L. Hall .....	104, 141
Elevator, Water .....	M. D. Gray .....	98, 952
Elevator, Water .....	W. G. Hamilton .....	99, 313
Elevator, Water .....	B. Wieland and D. S. Young .....	99, 734
Elevator, Water .....	M. S. McAttee .....	101, 484
Elevator, Water .....	G. C. Canfield .....	102, 655
Elevator, Water .....	H. Speur .....	103, 518
Elevator, Water .....	M. Heady .....	103, 613
Elevator, Water .....	J. F. Latimer .....	104, 605
Elevator, Water .....	M. S. McSwain .....	104, 976
Elevator, Water .....	T. L. Morriss .....	106, 189
Elevator, Water .....	B. Vater .....	107, 426
Elevator, Water .....	I. Dekle .....	108, 242
Elevator, Water .....	A. A. Moulton .....	109, 236
Elevator, Water .....	T. H. Hutchinson .....	109, 622
Elevator, water, Balanced .....	W. L. Thomas .....	100, 567

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Elevator, water, Steam.....	J. O. Wightman.....	101, 334
Elevator, water, Steam.....	C. Rogers.....	104, 650
Elevator, water, Steam.....	H. M. Wightman.....	106, 525
Elliptic springs, Machine for punching the leaves of.....	G. Hopson.....	100, 630
Elongating and spreading saw-teeth, Machine for.....	J. Orm.....	106, 978
Embossed wood, Coating.....	S. P. Wheeler.....	107, 428
Embroidery-holder.....	H. Gundaker.....	102, 536
Emery-soap for polishing and cleansing.....	D. D. W. Abbott.....	104, 812
Emery-wheel.....	J. L. Otis.....	100, 659
Emery-wheel clamp.....	E. A. Siverkrop.....	101, 058
Emery-wheels, Manufacture of.....	J. F. Wood.....	110, 102
Epaulet, Fastening for.....	E. J. Helwig.....	107, 614
Equalizer, Draught.....	W. M. Perkins and T. F. Vandegift.....	103, 727
Equalizer, Three-horse.....	J. T. Thornton.....	100, 469
Equalizer, Three-horse.....	J. C. Pfeil.....	103, 179
Equalizer, Two-horse.....	Z. B. Sims.....	106, 084
Eraser.....	H. T. Cushman.....	103, 149
Eraser-attachment for pencils.....	G. H. Richards.....	100, 189
Eraser, Rubber.....	M. D. Converse and F. A. Bates.....	104, 531
Escapement, Electro-motor.....	T. A. Edison.....	103, 035
Escapement for time-pieces.....	M. Tromly.....	100, 217
Enamel for clay gas-retorts, burners, tiles, &c.....	D. W. Clark.....	100, 725
Enamel for clock-dials.....	T. G. Libenaw and A. G. Heaney.....	101, 821
Encaustic painting, Composition for.....	W. H. F. Kehrwieler.....	105, 609
End-fastener for car-springs.....	G. Elliott.....	104, 718
End-gate for wagons.....	R. F. Stocking and C. P. Greene.....	109, 965
Engine, Air.....	D. Myers.....	109, 338
Engine and pump, Steam.....	G. Westinghouse, jr.....	106, 899
Engine, boiler, and superheater, Combined.....	F. B. Blanchard.....	100, 359
Engine, Cornish.....	J. Storer.....	106, 886
Engine, Crank-motion for.....	J. Smith and G. Joithe.....	104, 367
Engine, Direct-acting.....	C. P. Deane.....	102, 234
Engine, Direct-acting.....	A. S. Cameron.....	102, 486
Engine, Direct-acting.....	S. F. Shelbourne and C. E. Emery.....	109, 951
Engine, Direct-acting.....	W. J. Stevens.....	109, 963
Engine, direct-acting, Compound.....	W. M. Henderson.....	105, 941
Engine, Double-piston.....	A. W. Morrell.....	107, 524
Engine, Electro-magnetic.....	H. M. Paine.....	103, 228
Engine, Electro-magnetic.....	J. P. Tirrell.....	103, 798
Engine, gas, Ammoniacal.....	E. Lamm.....	105, 581
Engine, Hot-air.....	C. P. Leavitt.....	107, 928
Engine, Hydraulic.....	W. Eaton, B. Ainsworth, and G. W. Scott.....	101, 445
Engine, Hydraulic.....	A. D. Laws.....	102, 948
Engine, Magnetic.....	H. M. Paine.....	103, 229
Engine, Marine.....	J. Ericsson.....	106, 800
Engine, Marine.....	W. B. Reaney.....	109, 944
Engine, Mercurial-expansion.....	C. G. Wilson.....	104, 526
Engine, Motive-power.....	J. Robertson.....	106, 078
Engine, Oscillating.....	T. Hill.....	105, 204
Engine, Oscillating-piston.....	J. B. and S. M. Davis.....	109, 721
Engine, Paper.....	E. Hawkins.....	98, 691
Engine, Pneumatic-vacuum.....	J. S. Morton.....	102, 300
Engine, Pneumatic-vacuum.....	J. S. Morton and J. H. Laning.....	102, 301
Engine, Pumping.....	L. C. Rodier.....	106, 727
Engine, pumping, Steam.....	W. H. Roberts.....	99, 953
Engine, Rotary.....	F. Ortlieb.....	98, 619
Engine, Rotary.....	S. M. Snyder.....	98, 811
Engine, Rotary.....	S. D. Gilson.....	103, 869
Engine, Rotary.....	E. D. Mead.....	105, 708
Engine, Rotary.....	W. M. Fuller.....	105, 796
Engine, Rotary.....	S. Gibson.....	103, 016
Engine, Rotary.....	H. Jamieson.....	103, 148
Engine, Rotary.....	J. Constantine.....	109, 179
Engine, Rotary.....	W. A. Davis.....	109, 878
Engine, Rotary.....	R. Dudgeon.....	110, 022
Engine, Rotary steam.....	J. W. Hill and T. Roberts.....	100, 149
Engine, Rotary steam.....	J. W. Bailey.....	103, 279
Engine, Rotary steam.....	G. S. Follensbee.....	110, 350
Engine, Rotating.....	D. S. Money.....	107, 081
Engines, marine, Condenser for.....	J. Houtt.....	105, 457
Engine, Steam.....	P. Shellenback and J. Harton.....	99, 602
Engine, Steam.....	J. E. Culver.....	99, 855
Engine, Steam.....	J. S. Barden.....	100, 841
Engine, Steam.....	C. E. Long.....	101, 747
Engine, Steam.....	H. E. Long.....	103, 212
Engine, Steam.....	J. M. Curry.....	103, 431
Engine, Steam.....	J. H. Hoadley.....	105, 078
Engine, Steam.....	J. P. Merriam.....	106, 185
Engine, Steam.....	H. Mohr.....	106, 497
Engine, Steam.....	H. L. Butler and T. A. Christio.....	106, 777
Engine, Steam.....	E. Post.....	107, 098

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Engine, Steam.....	D. B. Caldwell.....	107, 161
Engine, Steam.....	W. I. Bolton and J. F. Spencer.....	107, 265
Engine, Steam.....	W. F. Richardson.....	107, 723
Engine, Steam.....	F. E. Kirby.....	108, 156
Engine, Steam.....	H. Young.....	108, 426
Engine, Steam.....	P. Estes.....	108, 576
Engine, Steam.....	J. Montgomery.....	108, 718
Engine, Steam.....	H. F. Ambros.....	108, 167
Engine, Steam.....	C. Strong and A. W. Stickney.....	109, 270
Engine, Steam.....	F. Wedge.....	109, 783
Engine, Steam and air.....	G. Warsop.....	100, 090
Engine, Steam and gas, combined.....	J. A. H. Ellis.....	108, 574
Engine, Steam and vapor.....	F. A. Morley.....	107, 206
Engine, steam, Direct-acting.....	W. D. Hooker.....	103, 904
Engine, steam, Oscillating.....	A. Nittinger, jr.....	106, 860
Engine, steam, Rotary.....	G. H. Pond.....	98, 626
Engine, steam, Rotary.....	W. P. Vickery.....	108, 412
Engine, steam, Valve-gear for.....	T. Hill.....	108, 137
Engines, traction, Tire for.....	O. Hyde.....	109, 907
Engines, Valve for.....	W. C. Selden.....	110, 294
Engine, Traction.....	T. F. Hull.....	104, 845
Engine, Traction.....	J. K. Lake.....	105, 956
Engine, Traction.....	M. P. Hall.....	106, 577
Engine, Traction.....	W. C. Donthett.....	107, 233
Engine, Water.....	R. Francis.....	109, 311
Engraving and chasing articles of metal, Machine for.....	T. Lippiatt.....	102, 950
Engraving-machine.....	J. C. Spencer.....	99, 794
Engraving-machine.....	C. J. Coulter.....	103, 576
Engraving-machine.....	J. D. Lathrop.....	104, 744
Envelope.....	B. C. Davis.....	107, 166
Envelope-fastener.....	M. E. Berolzheimer.....	102, 211
Envelope for safes, vaults, &c., Electro-magnetic.....	E. Holmes and H. C. Roome.....	110, 362
Envelope-machine.....	H. W. Chamberlain.....	99, 220
Envelope, Oil-cake.....	C. Eskrett and H. Searle.....	108, 774
Envelope-opener.....	J. P. Gruger.....	104, 018
Envelope-opener.....	L. A. Miller.....	105, 356
Envelopes, Device for moistening and closing.....	R. W. Walker.....	106, 098
Envelopes, Manufacturing.....	J. Ball.....	106, 451
Evaporating and concentrating bark extracts, Apparatus for.....	T. W. Johnson, jr., and A. W. Goodell.....	108, 793
Evaporating and distilling by solar heat.....	N. W. Wheeler and W. W. Evans.....	102, 633
Evaporating-apparatus.....	A. Youngs.....	102, 643
Evaporating-apparatus.....	S. D. Gilson.....	108, 701
Evaporating, Apparatus for.....	N. R. Martin.....	106, 270
Evaporator and still.....	M. H. Powers.....	104, 351
Evaporator, Cane-juice.....	J. S. Blymyer.....	110, 192
Excavating-apparatus.....	P. W. Clark.....	102, 492
Excavating-machine.....	A. W. Hansen.....	103, 749
Excavating-machine.....	J. A. Bailey.....	105, 883
Excavator.....	B. Slusser.....	104, 782
Excavator.....	C. H. Sage and S. P. Alger.....	109, 764
Excavator, Butter.....	N. J. Eaton.....	98, 938
Excavator, Earth.....	J. W. Myers.....	108, 723
Excavator, Sewer.....	F. W. Slater.....	99, 016
Exhauster, Sub-cutaneous.....	G. Dieulafoy.....	103, 027
Exhaust-nozzle.....	C. H. Frisbie.....	103, 596
Exhibiting photographic pictures, Device for.....	A. G. Walton.....	103, 472
Expelling volatile matter from peat and other materials.....	T. G. Walker.....	99, 733
Extracts, vegetable, Preserving.....	H. L. Palmer.....	105, 485
Eye-glass holder.....	G. Sickles.....	104, 216
Eyelet.....	T. Garrick.....	104, 013
Eyeletting-machine.....	E. Shaw.....	102, 054
Eyelet-machine.....	S. N. Smith.....	110, 508
Eyelet-machine, Feeding stock to.....	T. Garrick.....	104, 443
Eyelets, Die for forming.....	E. Tallman and N. G. Hoxsie.....	106, 938
Eyelets for fastening buttons.....	S. M. Porter.....	105, 978
Eyelets, Machine for cutting out the ends of.....	E. Tallman and N. G. Hoxsie.....	106, 939
Eyelets, Machine for forming and cutting, and for the preparation of stock for the same.....	S. W. Young.....	102, 195
Eyelet-stock, Machine for forming.....	T. Garrick.....	104, 442
<b>F.</b>		
Fabric, Felted.....	S. P. Siver.....	100, 563
Fabric for carpet-lining, &c.....	J. L. Kendall and R. H. Trested.....	103, 198
Fabric for head-covering.....	E. Arnheim.....	106, 024
Fabrics, Coating with parkesine.....	J. Lewthwaite.....	103, 209
Fabrics from vegetable and animal fibers, Manufacture of useful and ornamental.....	E. Pavy.....	104, 638
Fabrics, Machine for shirring.....	A. Hecht.....	104, 929
Fabrics, Manufactures of colors and their application to.....	A. Paraf.....	110, 277



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Fabrics, textile, Compound for dressing	J. McGill	102, 570
Fabrics to render them water-proof, Treating	C. Toppan	103, 799
Fabrics, woven, Machine for filling or starching	T. L. Livsey	110, 252
Fabric, Water-proof	T. M. Brown	99, 171
Fabric, Water-proof	T. Bracher	100, 591
Fabric, Woven-fringed	P. Cocker	110, 012
Facing valve and valve-seat, Process for	Q. S. Backus	102, 078
Fan	O. Brueck	108, 681
Fan and fly brush, Rotating	O. Metcalf	107, 396
Fan and parasol combined	J. Brooks	100, 719
Fan-attachment for rocking-chairs	R. Knaffl and T. M. Schlever	109, 744
Fan, Automatic	S. J. Tucker and J. H. Rose	101, 188
Fan, Automatic	D. Ramler	104, 768
Fan, Automatic	G. H. Briggs	105, 772
Fan, Automatic	J. Schnell and P. Shmitt	108, 637
Fan-blower	B. F. Sturtevant	102, 063
Fan-blower	L. D. Wheeler	103, 949
Fan, Grain	I. Peunington	99, 469
Fan, Grain	J. McPhail	100, 434
Fanning-mill and grain-separator	H. Ogborn	100, 552
Fanning-mill shoes, Device for balancing	W. Crane	107, 459
Fan or brush, table, Automatic	R. E. Tolar and W. D. Orr	106, 236
Fans, Device for opening and closing	G. Bordes	108, 096
Fan-stick, Machine for making	E. S. Hunt	107, 913
Fan, Table	J. C. McEwen	110, 381
Fan-tremolos, Operating	J. H. Dow	102, 096
Fare-box for passenger-cars	H. Baranger	104, 816
Fare-box for railroad-cars	W. G. Raoui	99, 351
Fare-box for railroad-cars	G. C. Hathorn	100, 755
Fare-box for street-cars	W. W. Wormood	99, 616
Fare-box for street-cars	W. H. Young	99, 504
Fare-box, Portable	A. Bradley	110, 428
Fare-recorder for cars, &c	O. S. Peas	104, 059
Fare-registering apparatus	C. A. Calvert	119, 339
Fastening for carriage-curtains	F. Baumgartner	100, 355
Fastening for epaulet	E. J. Helwig	107, 614
Fastening for neck-tie	W. A. Wicks	107, 744
Fastening for neck-ties	P. J. Shirts	107, 634
Fastening for overshoes	H. E. Starrett	100, 207
Fastening for policemen's badges	T. Kirkpatrick	106, 942
Fastening for shovels for cultivators and plows	J. Pierpont and S. S. Tuttle	108, 512
Fastening stove-door lining	H. G. Giles	99, 556
Fat, &c., Machine for cutting	A. Ffaff	104, 578
Fatty animal matter, Rendering	A. Smith	99, 252
Fatty matter for the manufacture of candles, Treating	A. R. St. Cyr	101, 935
Faucet	J. H. Dorst	98, 749
Faucet	J. M. A. Dow	100, 126
Faucet	F. M. Bachman and S. Eicker	100, 489
Faucet	J. Bulger	100, 721
Faucet	J. Ashcroft	101, 410
Faucet	T. Somerville	101, 533
Faucet	J. Heine and J. Vouficht	102, 120
Faucet	D. Wellington	102, 341
Faucet	W. H. Triscler	102, 634
Faucet	I. Carey	102, 773
Faucet	W. S. Cooper	103, 145
Faucet	G. Taylor	103, 523
Faucet	I. W. Harvey	104, 025
Faucet	W. McKay	104, 050
Faucet	A. Eggleston	104, 128
Faucet	J. Knoche	104, 602
Faucet	R. Tilly	104, 663
Faucet	E. Young	104, 811
Faucet	A. D. Puffer	104, 880
Faucet	J. Schaefer and G. Schock	105, 258
Faucet	W. Morganstern	105, 360
Faucet	J. H. Lord	105, 818
Faucet	H. B. Tiffany	106, 000
Faucet	W. Class and L. W. Sapp	108, 568
Faucet	A. Putnam	108, 824
Faucet	C. A. Douglas	109, 191
Faucet	O. Hanks	109, 730
Faucet	J. Hills	109, 902
Faucet	F. Wiesenhofer	110, 099
Faucet	M. Scrannage, and M. and W. H. Bate	110, 292
Faucet, Beer	F. Mauz	101, 966
Faucet, Beer	T. Ahrens	106, 020
Faucet, Beer	C. Jakob	108, 025
Faucet, Bottle	H. Fischer	108, 898
Faucet-filter	M. P. Simons	100, 079
Faucet measure and funnel, Combined	T. McMahon	99, 451

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Faucet, Measuring.	F. C. Heiser.	106, 816
Faucet or tap.	A. L. Webster.	106, 007
Faucet, Permutation.	W. F. Jones.	108, 153
Faucet, Self-closing.	C. Schultz and T. Warker.	109, 561
Faucet, Self-closing compression.	E. Noble.	106, 394
Faucet, Water.	P. A. Mayor.	110, 484
Faucet, Weighing.	D. Lesh, jr.	101, 633
Feather-duster.	M. A. Goodenough.	98, 759
Feather-renovator.	A. D. Cook and J. Graves.	100, 120
Feather-renovator.	M. K. Morris.	107, 944
Feather-renovator.	E. Bickell and M. F. Norakonk.	107, 999
Feather washer and drier.	J. Mallory.	100, 911
Feed and water trough, Combined.	J. Sherman.	103, 935
Feed-attachment for thrashing-machines.	B. Thompson.	107, 203
Feed-cutter and thrasher.	N. McLeod.	99, 931
Feed-device for power-press.	P. E. Austin.	108, 312
Feeder and indicator for steam-boilers, Automatic.	A. D. Clark.	105, 304
Feeder for grain-drill.	M. L. Nickels.	106, 950
Feeder, Steam-boiler.	J. M. Case.	101, 225
Feed for iron-planers.	H. B. Weaver.	101, 550
Feed-hopper.	J. Madison.	99, 926
Feeding-device for fanning-mill.	N. Kibler.	108, 154
Feeding-apparatus for nail-machine.	J. Nola.	101, 496
Feeding-apparatus for nail-machine.	U. S. Wolff.	102, 073
Feeding-mechanism for cotton-openers, &c.	W. E. Whitehead.	110, 318
Feeding-mechanism for wood-screw machinery.	C. D. Rogers.	108, 295
Feeding ores into shaft-roasting furnaces, Machine for.	C. Stetefeldt.	100, 337
Feed-regulator.	W. T. H. Daniels.	110, 015
Feed-roll for rossing-machines.	C. Gilpin.	109, 199
Feed-water heater for steam-generators.	E. B. Johnson.	99, 573
Feed-water regulator and low-water alarm.	A. W. Morrell.	101, 756
Feet for clock-cases, Adjustable.	O. R. Luther.	102, 413
Fellies for wheels, Machine for rounding.	H. A. Gore.	106, 931
Fellies, Machine for dressing.	W. H. Rodeheaver.	108, 129
Fellies with oil, Apparatus for saturating.	J. R. Faus.	106, 927
Felting-machine.	F. S. Jennings.	98, 871
Felting-machine.	C. P. Ladd.	110, 574
Felting, Machine for.	R. Eikemeyer.	108, 121
Felting-roofing, Machine for making.	E. Van Orden.	104, 320
Felt, Roofing.	W. B. Coates.	106, 327
Felt-roofing, Manufacture of.	S. Kingan.	103, 199
Felloe-plate for carriage-wheels.	F. B. Morse.	103, 273
Felloes, Machine for bending.	D. A. Sprinkle.	100, 685
Felloes, Machine for dressing.	H. Kurtz.	98, 696
Fence.	J. Fox.	98, 682
Fence.	M. Vanwormer.	99, 796
Fence.	J. Kerr.	99, 911
Fence.	H. H. Margeson.	100, 169
Fence.	G. S. Mills.	100, 310
Fence.	D. Mitchell.	100, 919
Fence.	T. Coffield.	101, 351
Fence.	E. Kirk.	102, 834
Fence.	W. P. Wright.	103, 270
Fence.	J. McKee.	103, 483
Fence.	L. E. Lockling and N. N. Whitaker.	103, 903
Fence.	B. Rowell.	104, 065
Fence.	D. M. Tyler.	105, 143
Fence.	J. W. Cherry.	105, 303
Fence.	S. P. Coon.	105, 307
Fence.	D. McCurdy.	106, 183
Fence.	W. Bartlett.	106, 455
Fence.	I. M. West.	106, 640
Fence.	E. Fales.	107, 020
Fence.	T. W. Owens.	107, 095
Fence.	P. L. Sherman.	107, 297
Fence.	L. Phillips.	107, 533
Fence.	J. Comstock.	107, 879
Fence.	N. Woolsey.	108, 227
Fence.	W. A. Middleton.	108, 925
Fence.	U. D. Mihills.	109, 036
Fence.	C. N. Hitchcock and H. P. T. Wilson.	109, 127
Fence.	R. J. Flauner.	109, 606
Fence.	W. W. Sullivan.	110, 170
Fence.	W. D. Hillis.	110, 234
Fence and gate.	E. Muirheid.	102, 576
Fence, Farm.	P. Kidney.	105, 221
Fence, Farm.	T. W. Owens.	105, 239
Fence, Field.	D. Sattler.	99, 112
Fence, Flood.	D. J. Miller.	105, 210
Fence-gate, Portable.	J. W. Curtis.	106, 670
Fence, Hedge.	A. Belt.	100, 843

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Fence, Iron .....	S. Crowell .....	108, 112
Fence-pickets, Machine for dressing .....	W. and J. F. Nuelle .....	110, 586
Fence, Portable .....	J. O. Smith .....	106, 088
Fence, Portable .....	E. Hunt .....	106, 826
Fence, Portable .....	W. Crumb .....	107, 883
Fence-post driver, Portable .....	W. Carns .....	103, 716
Fence-posts, Setting .....	W. Fulkerson .....	107, 770
Fence, Wire .....	B. Wilson and F. P. Grimes .....	109, 853
Fence, Wire and stone, combined .....	H. C. Wire .....	102, 902
Fender and fire-screen, Combined .....	J. Miller and W. H. B. Flender .....	105, 231
Fender, Clod and cornstalk .....	G. H. Jackson .....	99, 905
Fender for fire-place heaters .....	D. Stuart and L. Bridge .....	99, 726
Fender for fire-place stove .....	J. Martino .....	99, 579
Fender for fire-place stove .....	J. Martino .....	99, 580
Fender for heating-stove .....	N. A. Boynton .....	98, 914
Fertilizer .....	I. W. Speyer .....	99, 255
Fertilizer .....	J. Commins .....	99, 294
Fertilizer .....	J. Commins .....	100, 729
Fertilizer .....	H. A. Hogel .....	101, 131
Fertilizer .....	B. F. Croasdale .....	106, 918
Fertilizer and oil from fish, Manufacture of .....	O. Lugo .....	102, 689
Fertilizer, Compound for .....	G. Bourgate .....	106, 313
Fertilizer-distributor .....	J. J. Singleton .....	108, 196
Fertilizer-distributor, corn, and cotton-seed planter .....	R. M. Brooks .....	102, 910
Fertilizer from excrements .....	F. Wicke, J. Brönnner, T. Petersen, and J. G. Zehfuss .....	100, 347
Fertilizer from glue residuum .....	A. Van Haagen and W. Adamson .....	99, 978
Fertilizer, Manufacture of .....	C. P. Houghton .....	108, 909
Fertilizer or fish guano .....	O. Lugo .....	99, 452
Fertilizers, Apparatus for keeping pure the air in the manufacture of .....	J. E. Cox .....	101, 353
Fertilizers, Cylinder for mixing .....	L. B. Pitcher .....	105, 839
Fertilizers from animal substances, Manufacture of .....	O. Lugo .....	100, 163
Fertilizers from fish, &c., Manufacture of .....	O. Lugo .....	104, 370
Fertilizers, Machine for distributing .....	J. F. Keller .....	104, 854
Fertilizers, Manufacture of .....	O. Lugo .....	99, 924
Fertilizers, Manufacture of .....	J. Y. Diaz .....	100, 871
Fertilizers, Manufacture of .....	W. I. Sapp .....	102, 438
Fertilizers, Manufacture of .....	E. Whitley .....	105, 283
Fertilizers, Manufacture of .....	T. Sim .....	106, 626
Fertilizers, Manufacture of .....	J. Cummins .....	107, 878
Fertilizers, Preparing ammoniated sulphuric acid for the manufacture of .....	C. U. Shepard, jr. ....	100, 457
Fertilizing compound .....	J. M. Lowenstein .....	108, 369
Fever and ague, Compound for the cure of .....	O. M. Spilling .....	105, 011
Fever and ague, Medical compound for the cure of .....	M. Ferro .....	107, 024
Fever and ague medicine .....	S. Lughton .....	105, 224
Fever and ague, Medicine for cure of .....	J. H. Morris .....	99, 583
Fibers from sisal grass and like substances, Machine for preparing .....	G. E. Hopkins and W. B. Shedd .....	110, 237
Fibers, Separating animal from vegetable .....	J. Stuart .....	107, 833
Fibrous and textile materials, Fixing pigments to .....	A. Paraf .....	99, 105
Fibrous material, Machinery for washing and dyeing .....	C. G. Sargent .....	103, 506
Fibrous material, Preparation of .....	J. Woodruff and F. Boyd .....	103, 115
Fibrous material to a textile stock, Apparatus for reducing .....	L. Dean .....	106, 133
Field-roller and furrowing machine .....	M. M. Robbins .....	108, 056
Fifth-wheel .....	J. LeRoy .....	109, 636
File .....	J. H. Clark .....	105, 044
Files, Machine for making .....	E. B. Rollins .....	103, 240
Files, Method of making .....	T. L. Smith .....	104, 507
Files, Process and apparatus for hardening .....	S. Darling .....	105, 180
Fillings for wood .....	T. R. Sherry .....	109, 769
Filter .....	T. P. Thompson .....	102, 881
Filter .....	J. M. Hackney .....	103, 173
Filter .....	T. Barrows .....	103, 280
Filter .....	E. S. Furson .....	103, 592
Filter .....	J. Nixon .....	104, 987
Filter .....	J. Bean .....	109, 288
Filter .....	G. Curtis .....	109, 592
Filter .....	G. Curtis .....	109, 593
Filter and cooler, Combined .....	J. E. White .....	102, 455
Filter, Cistern .....	P. Laughlin .....	100, 418
Filter, Feed-water .....	G. Waters .....	100, 344
Filter, Feed-water .....	J. S. Hooton .....	105, 209
Filter for cistern .....	P. Laughlin .....	103, 206
Filters for cisterns .....	B. B. Redfield .....	100, 323
Filter for wines, sirups, &c .....	J. Strauss .....	109, 467
Filtering-apparatus for pipes .....	T. S. Hudson .....	98, 596
Filter-supportor .....	F. C. Hughes .....	104, 959

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Filter-tank and other vessels used in refining sirups, sugar, &c.	W. Moller	110, 488
Finger-guard	G. H. Spencer	107, 420
Finger-ring	J. S. Palmer	110, 557
Finishing copper plates	B. F. Dudley	108, 337
Finishing the surface of plated goods	J. Rogers	108, 940
Fire-alarm signal-box	G. W. Shawk	99, 353
Fire-alarm telegraph-apparatus	E. Rogers	104, 357
Fire-alarm telegraph, Signal-box for	S. D. Cushman	103, 150
Fire-alarm, Thermostat	W. B. Watkins	102, 992
Fire-beds and tuyeres, Construction of, jointly	P. H. and F. M. Roots	108, 519
Fire-arm, Breech-loading	W. G. Ward	99, 504
Fire-arm, Breech-loading	G. H. Fox	98, 579
Fire-arm, Breech-loading	B. B. Hotchkiss	99, 898
Fire-arm, Breech-loading	H. Berdan	101, 418
Fire-arm, Breech-loading	J. J. Cloes	101, 826
Fire-arm, Breech-loading	E. S. Renwick	102, 434
Fire-arm, Breech-loading	A. Muller	103, 488
Fire-arm, Breech-loading	O. M. Robinson	103, 504
Fire-arm, Breech-loading	F. Wesson	103, 694
Fire-arm, Breech-loading	K. V. Barnekoy	104, 100
Fire-arm, Breech-loading	G. W. Schofield	104, 211
Fire-arm, Breech-loading	W. Soper	104, 223
Fire-arm, Breech-loading	J. M. Whittemore	104, 337
Fire-arm, Breech-loading	E. L. Sargent	104, 502
Fire-arm, Breech-loading	L. V. Young	104, 682
Fire-arm, Breech-loading	S. Rydbeck	104, 775
Fire-arm, Breech-loading	A. B. Ely and E. C. Clay	105, 058
Fire-arm, Breech-loading	E. A. Thuer	105, 388
Fire-arm, Breech-loading	T. D. Simpson, G. R. Gray, and J. R. Romans	106, 083
Fire-arm, Breech-loading	P. Schuler	108, 836
Fire-arm, Breech-loading	W. M. Scott	108, 942
Fire-arm, Breech-loading	B. F. Joslyn	109, 218
Fire-arm, Breech-loading	E. L. Sargent	109, 235
Fire-arm, Breech-loading	A. B. Kay	109, 419
Fire-arm, Breech-loading	J. Hanson	109, 731
Fire-arm, Breech-loading	C. Green	109, 890
Fire-arm, Breech-loading	S. Gerngross	110, 353
Fire-arm, Breech-loading	J. Smiles	110, 505
Fire-arm, Magazine	D. Ellis	101, 845
Fire-arm, Magazine	J. Kraffert	105, 093
Fire-arm, Revolving	B. R. Hill	98, 768
Fire-arm, Revolving	R. White	99, 505
Fire-arm, Revolving	B. R. Hill	99, 893
Fire-arm, Revolving	C. F. and J. E. DeDartein	102, 782
Fire-arm, Revolving	G. W. H. Calver	103, 013
Fire-arm, Revolving	W. I. Page	104, 836
Fire-arm, Revolving	B. F. Joslyn	109, 417
Fire-arm, Revolving	C. J. Linberg and W. J. Phillips	109, 914
Fire-arms, Breech-loading	E. L. Sargent	100, 455
Fire-arms, Breech-loading	J. Davis	103, 154
Fire-arms, Breech-loading	H. Berdan	108, 869
Fire-arms, Breech-loading	F. Vetterlin	109, 277
Fire-arms, Breech-loading	W. H. Elliott	110, 024
Fire-arms, Lock for	A. Young	104, 394
Fire-arms, repeating, Feeder for	L. W. Broadwell	110, 338
Fire-arms, Revolving	J. C. Miller	99, 693
Fire, Composition for extinguishing	W. P. Van Deursen	103, 800
Fire, Compound for extinguishing	W. P. Van Deursen	106, 518
Fire-cracker holder	C. Most	106, 714
Fire-cracker pistol or holder	R. Hutchison	109, 014
Fire-cracker pistol, Revolving	J. H. Hawes and O. W. Brock	108, 122
Fire-detector with the alarm, Connecting	H. L. Brower	109, 292
Fire-engine, Steam	E. R. and H. S. Cole	108, 452
Fire-escape	W. and G. H. Burditt	99, 399
Fire-escape	M. Lewis and J. G. Swenson	100, 777
Fire-escape	J. Steger	101, 393
Fire-escape	L. Wahle	105, 280
Fire-escape	J. A. Griswold	106, 812
Fire-escape	W. Miller	107, 077
Fire-extinguisher	C. G. Wheeler	99, 270
Fire-extinguisher	G. Cowing	102, 229
Fire-extinguisher	G. F. Pinkham	102, 431
Fire-extinguisher	W. M. Parker	102, 582
Fire-extinguisher	L. Herman	105, 293
Fire-extinguisher	J. B. Van Dyno	105, 279
Fire-extinguisher	T. Tripp	106, 517
Fire-extinguisher	W. P. Van Deursen	109, 975
Fire-extinguisher	J. B. Van Dyne	109, 976
Fire-extinguisher, Chemical	E. Bigelow	109, 576

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Fire-extinguisher for railroad-cars, &c., Automatic....	W. P. Van Deursen and W. C. Davis ..	106, 002
Fire-extinguisher for use on railroad-cars, &c., Auto- matic.	H. C. Stewart and R. T. Bradley .....	101, 404
Fire-kindler .....	C. Batcheller .....	101, 704
Fire-kindler .....	A. S. Morse and E. A. Jefferies .....	104, 336
Fire-kindler .....	J. Kenney, sr. ....	109, 324
Fire-kindling .....	G. W. Eldridge .....	101, 597
Fire-kindling .....	G. W. Eldridge .....	103, 163
Fire-kindling .....	J. L. Hannum and S. H. Stebbins .....	104, 145
Fire-kindling fagots .....	W. J. Wiggins and C. Stout .....	103, 951
Fire-place .....	J. Moore .....	101, 645
Fire-place .....	A. B. Johnson .....	105, 806
Fire-place .....	T. W. Baird .....	106, 985
Fire-place .....	T. Phillips .....	103, 180
Fire-place back .....	J. I. Bard .....	99, 748
Fire-place, Base-burning .....	W. E. Wood .....	101, 341
Fire-plug .....	J. Curran .....	99, 646
Fires, Apparatus for extinguishing .....	I. H. Clark .....	99, 291
Fish and animal matters, Treating, to obtain oils, fats, &c.	W. J. and T. Hooper ..	99, 896
Fish, &c., Apparatus for drying .....	W. J. and T. Hooper and O. Lugo .....	99, 673
Fish-joint for railway-rails .....	H. Cook .....	99, 849
Fish, Manufacture of fertilizers and oil from .....	O. Lugo .....	102, 689
Fish, meats, &c., Device for freezing .....	D. Y. Howell .....	109, 820
Fish-nets, &c., Metallic .....	W. Beck .....	103, 553
Fitting and setting axles, Apparatus for .....	J. Cunningham .....	109, 115
Flanging-apparatus .....	E. Regan .....	99, 707
Flask for casting stamp-shoes for crushing-mills .....	H. Bolthoff .....	103, 556
Flask-guide .....	T. S. Brown .....	101, 426
Flask, Molders' .....	A. Wilcox .....	98, 728
Flask, Pocket .....	A. Tappan .....	99, 051
Flat or sad iron .....	L. Lincoln .....	104, 748
Flax, hemp, &c., Machine for spinning .....	H. A. Chapin .....	106, 466
Flax-puller .....	J. Smith .....	102, 875
Flier for spinning .....	T. Mayor .....	110, 260
Float and sinker to fishing-lines, Attaching .....	J. Ingram .....	99, 572
Flock-machine .....	W. McAllister .....	109, 920
Flooring .....	W. Baum .....	99, 522
Flooring .....	C. J. McAllister .....	101, 638
Flooring-set .....	T. M. Richardson .....	99, 477
Flooring, wainscoting, &c., Composition for .....	S. Whitmarsh .....	98, 652
Floor, malting, Laying .....	C. Hollmann .....	103, 333
Floor, Mosaic .....	J. Stegmiller .....	109, 265
Floors, ceilings, roofs, &c., Mode and material for con- structing.	G. C. Bouziat .....	103, 553
Floors of railroad-cars, Attaching spittoons to .....	J. S. Daggett .....	99, 857
Floor, Tesselated .....	L. B. Hamilton .....	103, 781
Flour and meal chest .....	J. M. Dashiell .....	101, 438
Flour-bolt .....	A. J. Dibble .....	99, 861
Flour-bolt .....	J. Skinner .....	106, 223
Flour-bolt .....	J. H. Jones .....	106, 697
Flour-bolt .....	J. Mallin .....	107, 935
Flour-bolt .....	J. Fickinger .....	103, 246
Flour-bolt .....	C. T. Hanna .....	110, 456
Flour-bolt attachment .....	O. Turner .....	105, 618
Flour-bolt feeder .....	E. J. Weaver .....	108, 417
Flour-bolting apparatus .....	L. C. A. Schmidt .....	103, 764
Flour-bolt knocker .....	J. W. Brady .....	105, 034
Flour from bran, Machine for separating .....	W. W. Huntley and A. Babcock .....	101, 736
Flour, Machine for packing .....	W. Bashor .....	104, 817
Flour, Machine for packing .....	B. F. Bashor .....	106, 912
Flour, Manufacture of .....	W. Freudenan .....	99, 427
Flour-packer .....	A. H. Nordyke .....	110, 155
Flour sifter, colander, and strainer .....	A. T. Boon and L. Mills .....	101, 423
Flower-pot .....	C. R. Penfield .....	102, 311
Flower-pot .....	C. L. Steele .....	107, 558
Flower-pot, vase, and basket .....	T. McClunie .....	107, 073
Flowers, artificial, Manufacture of .....	O. E. Fillion .....	102, 798
Flowers, artificial, Manufacture of .....	C. E. Howard .....	100, 293
Flowers, Shears for cutting .....	J. W. Barbour .....	103, 091
Flower-stand .....	H. H. Kendrick .....	109, 130
Flower-trellis .....	P. B. Sheldon .....	108, 195
Flue .....	N. Fouché .....	108, 014
Flue-cleaner for cooking-stoves .....	H. L. Palmer .....	103, 726
Flue for dry-house .....	W. B. Hix .....	100, 530
Fluting and sad iron .....	M. H. Knapp .....	105, 953
Fluting and sad iron .....	C. Hyatt .....	106, 828
Fluting-machine .....	S. G. Cabell .....	100, 371
Fluting-machine .....	C. R. L. Holmes .....	100, 405
Fluting-machine .....	T. Leavitt and E. L. Howard .....	100, 645
Fluting-machine .....	E. M. Deey .....	100, 989



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Fluting-machine .....	E. J. Manville.....	103, 063
Fluting-machine .....	M. P. Carpenter.....	104, 825
Fluting-machine .....	S. G. Cabell.....	107, 657
Fluting-machine .....	C. Dion.....	108, 336
Fluting-machine .....	H. Sauerbier.....	109, 456
Fluting-machine .....	W. P. McKee.....	109, 535
Fluting-machine .....	A. Y. Hubbell.....	109, 728
Fluting-machines, Roller for .....	H. Sauerbier.....	106, 239
Flux for working metals and minerals .....	S. W. Kirk.....	109, 021
Fly-net for horses.....	J. M. Harman.....	99, 434
Fly-net for horses.....	J. Graham.....	102, 113
Fly-net for horses.....	J. S. Huston.....	103, 337
Fly-wheel, Sectional.....	H. L. Farr.....	99, 659
Folding or winding and measuring cords, &c., Machine for.....	G. P. Farmer.....	102, 931
Food for horses and cattle.....	E. H. Clowser.....	93, 849
Food, Preserving various articles of.....	H. L. Palmer.....	105, 484
Foot-rest and boot-jack combined.....	D. H. James.....	110, 240
Foot-stool for churches, &c.....	W. G. Brown.....	100, 971
Foot-warmer, Electric.....	C. V. Littlepage.....	103, 061
Forge.....	G. Campbell.....	100, 975
Forge-hammer, Compressed air.....	C. Vogel.....	106, 892
Forging and stamping device.....	W. Ball.....	98, 839
Forge, Portable.....	P. H. and F. M. Roots.....	108, 941
Fork and band-cutter, Combined.....	M. Wenger.....	106, 758
Fork, Barley or gavel.....	B. P. Sharp.....	102, 598
Fork for peach-parer.....	D. H. Goodell.....	102, 934
Fork, Grain.....	W. S. Bryan.....	106, 656
Fork, Hay.....	L. Rogers.....	98, 711
Fork, Hay and manure.....	R. A. Peet.....	104, 993
Forks, Machine for bending.....	I. G. Batcheller.....	106, 769
Fork, Table.....	J. Patterson.....	99, 341
Fork, Toasting.....	H. H. Taylor and G. H. Graham.....	99, 971
Former for hoop-skirts.....	C. C. Wilson.....	102, 638
Forming blown glass-ware, Mode of.....	H. Dillaway.....	100, 127
Forming T-bolts, Method of.....	J. Deeble.....	93, 931
Forming umbrella-handles from plastic material, Mode of.....	L. Chapman.....	107, 000
Foundation for buildings.....	A. F. Cooper.....	100, 262
Foundry flask-clamp.....	C. C. Stewart.....	102, 987
Fountain.....	A. P. Yates.....	103, 814
Fountain brush-holder.....	W. A. Shepard.....	105, 135
Fountain, Self-feeding.....	E. Amende.....	104, 921
Fowls, Medical compound for.....	J. H. Kipp.....	108, 693
Frame for dyeing in various colors for the manufacture of Scotch plaids, &c.....	C. Barton.....	99, 750
Frame for passe-partout.....	P. Mignot.....	102, 296
Frame for potato-diggers and shovel-plows.....	J. M. Dick.....	105, 922
Frame for sensitizing photographic paper.....	L. V. Moulton.....	105, 233
Frame for street-lamps, &c.....	J. Radston.....	113, 238
Frame of safe-case for papers.....	S. H. Harris.....	107, 043
French bedstead.....	R. C. Dubois.....	102, 098
Friction calendar-rolls for paper.....	W. H. Soley and G. Stites.....	101, 532
Friction-clutch.....	S. Ingersoll.....	99, 199
Friction-clutch.....	F. A. Pratt.....	100, 064
Friction-clutch.....	O. Lull.....	103, 634
Friction-clutch.....	T. Coldwell.....	109, 229
Friction-clutch.....	W. W. Jerome, S. B. Alger, and C. H. Sage.....	109, 740
Friction-clutch for engaging and disengaging gearing.....	G. D. Emerson.....	104, 846
Friction-clutch mechanism.....	M. G. Crane and A. M. Polsey.....	99, 761
Friction-locomotive.....	T. S. Minnis.....	107, 702
Friction-match lighter, Manufacture of.....	W. Porter.....	107, 810
Friction-matches, Composition for the manufacture of.....	J. J. Karlen.....	101, 625
Friction-pulley.....	E. F. Allen.....	108, 749
Friction-roller.....	W. Brown.....	109, 866
Friction-roller bearing.....	C. M. Daboll.....	102, 779
Friction-roller for railway-car trucks.....	J. Pencille.....	107, 955
Friction-roll for yard-arms.....	F. Thoits.....	100, 468
Friction-wheels for gearing.....	W. D. Andrews.....	100, 839
Frosted plush-paper, Manufacture of.....	H. V. Edmond.....	103, 999
Fruit and vegetable parer.....	H. Soggs.....	110, 167
Fruit and vegetable slicer.....	W. A. Mayhew.....	107, 516
Fruit and vegetables, Machine for paring.....	A. G. Batchelder.....	103, 830
Fruit, Apparatus for preserving.....	W. W. Lyman.....	102, 951
Fruit-basket.....	G. H. White.....	109, 983
Fruit-basket, Paper.....	A. Adams and J. F. Jewett.....	105, 619
Fruit-baskets, Cutter for cutting the bodies of.....	B. D. Whitney.....	103, 533
Fruit-baskets, Machine for bottoming.....	B. D. Whitney.....	103, 532
Fruit-cans and other cylindrical packages, Machine for varnishing and labeling.....	A. C. Platt.....	106, 724
Fruit-cans, Machine for making.....	I. Kling.....	100, 775

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Fruit-corer .....	E. J. Marsters .....	106, 706
Fruit-crate .....	G. Clapp .....	109, 175
Fruit-drier .....	J. Mongene .....	102, 298
Fruit-drier .....	J. Hildebrand .....	103, 744
Fruit-drier .....	N. C. Cooley .....	104, 559
Fruit-drier .....	G. M. Sternberg .....	104, 788
Fruit-drier .....	H. Henley .....	106, 484
Fruit-drier .....	O. P. Pence .....	108, 048
Fruit-drier .....	J. B. Okey .....	108, 289
Fruit-drier .....	J. B. May .....	100, 914
Fruit, Machine for cauning .....	J. H. Ellis .....	104, 438
Fruit, Machine for paring .....	W. H. Williams .....	100, 348
Fruit, Method of preserving .....	G. Jaques .....	107, 689
Fruit-parer .....	L. S. Woodburn .....	110, 322
Fruit-picker .....	D. F. Slane .....	98, 689
Fruit-preserving house .....	J. Prior .....	99, 349
Fruit, provisions, &c., Box for packing .....	G. M. Huston .....	109, 821
Fruit-pulp, Apparatus for separating the seed from .....	R. H. Mayo .....	101, 289
Fruits, Composition of matter for preserving from decay.	G. Jaques .....	107, 690
Fruit-straining apparatus .....	M. E. Grigsby .....	105, 196
Fruits, vegetables, &c., Process and apparatus for preserving.	J. C. Wrenshall .....	104, 680
Fruits, vegetables, &c., Preserving .....	L. Bradley and T. D. Phillips .....	99, 628
Fruit-trees, Composition for destroying worms in .....	S. Kepner .....	108, 030
Fuel, Artificial .....	P. M. McGill .....	98, 786
Fuel, Artificial .....	H. Wurz .....	99, 738
Fuel, Artificial .....	C. D. Williams .....	103, 266
Fuel, Artificial .....	C. F. Loiseau and C. B. Requin .....	104, 471
Fuel, Artificial .....	P. M. McGill .....	109, 231
Fuel, artificial, Manufacture of .....	J. F. Cranston, J. H. Banks, and J. M. Ingersoll .....	101, 828
Fuel, artificial, Manufacture of .....	E. J. De Smedt .....	103, 580
Fuel, liquid, for producing heat and light, Process and apparatus for using.	T. S. Dickerson and R. M. Whipple .....	102, 662
Funnel .....	W. E. Ledmann .....	100, 420
Funnel .....	P. H. Niles .....	102, 855
Funnel .....	C. Rnf .....	102, 974
Funnel .....	A. Warth .....	103, 360
Funnel, Beer .....	W. Golden .....	104, 574
Funnel, Can-filler .....	T. Scantlin .....	102, 050
Funnel, measuring, Safety .....	F. H. Smith .....	105, 857
Furnace .....	J. B. Hoyt .....	99, 570
Furnace .....	T. Speakman .....	100, 205
Furnace .....	J. Hulbert, jr .....	101, 621
Furnace .....	J. R. Morris .....	101, 965
Furnace and flue, Boiler .....	W. H. Burns .....	99, 839
Furnace and process for treating iron and other ores .....	J. Y. Smith .....	109, 355
Furnace and range combined .....	E. Edward .....	107, 347
Furnace and tea-kettle, Combined .....	C. L. Taylor and G. C. Setchell .....	106, 889
Furnace, blast, Apparatus for .....	R. A. Smith .....	109, 356
Furnace, Coke .....	T. Price .....	109, 940
Furnace for burning edgings, saw-dust, &c. .....	I. O. Smith .....	99, 793
Furnace for burning shavings .....	L. Crandall .....	110, 118
Furnace for deoxidizing iron ore .....	A. W. Honsinger .....	98, 496
Furnace for deoxidizing iron ore .....	A. H. Brainerd .....	109, 173
Furnace for drying sand .....	I. D. Johnson and A. Hartwell .....	100, 636
Furnace for melting and refining iron, &c. .....	A. F. Du Faur .....	99, 415
Furnace for producing "sponge" from iron ore .....	G. Nock .....	103, 489
Furnace for re-burning bone-black and reducing ores .....	A. Weber .....	105, 747
Furnace for reducing ores .....	C. M. Atkins and A. Govan .....	103, 409
Furnace for roasting, oxidizing, and chloridizing ores .....	J. P. Arey .....	103, 006
Furnace for salt-boiling .....	W. J. Dodge .....	105, 786
Furnace for smelting and for other purposes .....	J. Thomas .....	100, 566
Furnace for smelting scrap-iron .....	A. Ott .....	107, 712
Furnace for steam-engines .....	G. M. Wyne and W. McGrove .....	105, 617
Furnace for treating cast iron to convert the same into iron and steel.	W. Fields .....	103, 437
Furnace, gas, Metallurgic .....	C. W. Siemens .....	109, 064
Furnace, Gas-producing .....	W. Gerhardt .....	99, 554
Furnace, Glass .....	J. Henderson .....	98, 963
Furnace, grate-bar, and grating .....	J. Cuthbert .....	102, 233
Furnace, Heating .....	W. D. Bartlett .....	101, 082
Furnace, Heating .....	W. A. Sweet .....	105, 738
Furnace, Heating and other .....	T. Hydes and J. Bennet .....	101, 017
Furnace, Hot-air .....	E. Slater .....	99, 015
Furnace, Hot-air .....	E. D. Norcross .....	99, 585
Furnace, Hot-air .....	W. Smith .....	99, 963
Furnace, Hot-air .....	O. Bellman and J. W. Garver .....	100, 107
Furnace, Hot-air .....	B. Gommenginger .....	100, 231
Furnace, Hot-air .....	T. W. Chatfield .....	100, 979

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Furnace, Hot-air.....	L. Bonnell.....	101, 422
Furnace, Hot-air.....	J. S. Van Buren.....	101, 653
Furnace, Hot-air.....	L. W. Brown.....	102, 086
Furnace, Hot-air.....	G. H. Miller.....	102, 956
Furnace, Hot-air.....	M. A. Thayer.....	103, 300
Furnace, Hot-air.....	M. G. Fagan.....	104, 842
Furnace, Hot-air.....	B. S. Koll.....	104, 962
Furnace, Hot-air.....	E. Webster.....	105, 017
Furnace, Hot-air.....	G. C. Thomas.....	105, 864
Furnace, Hot-air.....	J. McCoy.....	106, 703
Furnace, Hot-air.....	J. Van.....	106, 746
Furnace, Hot-air.....	S. B. Sexton and G. W. Beard.....	108, 733
Furnace, Hot-air.....	R. F. Brown.....	108, 754
Furnace, Hot-air.....	W. and W. James, jr.....	108, 790
Furnace, hot-air, Base-burning.....	J. G. Porter.....	101, 911
Furnace, Hot-blast.....	A. Burtenshaw.....	101, 223
Furnace, Metallurgic.....	J. Montgomery.....	99, 456
Furnace or oven and tempering-die, Combined.....	H. Disston.....	107, 599
Furnace, Portable.....	T. Chadwick.....	100, 117
Furnace, Portable.....	J. H. Lyon.....	101, 893
Furnace, Portable.....	S. Gregory.....	103, 736
Furnace, Portable.....	C. Van De Mark.....	109, 780
Furnace, Puddling.....	S. McLaughlin.....	100, 305
Furnace, puddling, Rotary.....	E. Wood.....	109, 284
Furnace, Raking-attachment for.....	J. Rice.....	105, 249
Furnaces, blast, Apparatus for opening and closing the top of.....	J. Thomas.....	103, 391
Furnaces, boiling and puddling, Fix for.....	J. D. Williams.....	98, 534
Furnaces, Collecting, separating, and purifying the gases from.....	J. H. Connelly and J. McLure.....	103, 572
Furnaces for ores, Roasting.....	J. Collom.....	106, 553
Furnaces, Heating and puddling slide-door for.....	S. McLaughlin.....	108, 501
Furnaces, Heating metallurgic and other.....	J. D. Whelpley and J. J. Storer.....	109, 785
Furnaces, Metallurgic and other.....	T. Weiss.....	103, 862
Furnaces, metallurgic and other, Feeding fuel to.....	J. D. Whelpley and J. J. Storer.....	103, 695
Furnaces, Puddling and other.....	T. E. Purchase.....	101, 658
Furnaces, puddling, boiling, and other, Stack for.....	W. Swindell.....	1-6, 636
Furnace, Steam-boiler.....	J. Q. C. Scarle.....	98, 805
Furnace, Steam-boiler.....	C. J. Hagstroom.....	103, 324
Furnace, Summer cooking.....	R. O. Stevenson.....	101, 676
Furnace, Tank, for making glass.....	G. Leuffgen.....	103, 208
Furnace, Tinsmiths'.....	M. Conner.....	108, 762
Furnace, Tinsmiths'.....	M. Conner.....	109, 805
Furniture, Barbers'.....	O. Stoelker.....	106, 425
Furniture-fastening.....	L. A. Johnson.....	1-6, 590
Furniture, Marine.....	L. D. Newell.....	101, 490
Furniture, Mode of suspending mirrors to.....	L. Pierce.....	100, 663
Furniture-pad.....	W. B. Moses.....	101, 648
Furniture, Printers'.....	A. N. Kellogg.....	102, 013
Furniture, School.....	J. McG. Johnson.....	104, 161
Furniture, Stationery.....	A. D. Hibbs.....	102, 398
Furs, Dyeing.....	P. Norden and H. Mischio.....	107, 800
Fuse-composition.....	W. H. Rogers.....	103, 931
Fuse-head, Electric.....	H. J. Smith.....	104, 217
G.		
Gaff-block for vessels.....	C. D. Smith.....	99, 362
Gag-runner and buckle.....	S. Siebold.....	101, 386
Galley.....	F. M. Wildman.....	107, 144
Galley-rest.....	H. H. Gale.....	107, 246
Galvanic batteries, Liquid for.....	E. Prevost.....	107, 811
Game.....	N. J. V. Weyde.....	104, 379
Game.....	D. F. Hale.....	108, 587
Game-board, Combination.....	C. Krath and G. Hermann.....	107, 065
Game-box for ten-pins.....	C. B. Fowler.....	107, 030
Games, Apparatus for playing.....	H. Plumb.....	103, 774
Garancine, Preparation of.....	S. Borden.....	109, 489
Gardens, Elevated and suspended.....	F. O. Rogers.....	101, 918
Garden-tool, Combined.....	L. and F. Perrott and C. H. Bates.....	109, 657
Garment, Dummy.....	A. M. Davis.....	101, 591
Garment-hanger and size-ticket holder combined.....	I. Desky and F. A. Jennings.....	98, 476
Garment-holder.....	B. Van C. Taylor.....	109, 156
Garment, Life-preserving.....	W. Morris.....	102, 419
Garment-pattern, Adjustable.....	S. Shawcross.....	101, 152
Garments, Applying measurement to and laying out.....	J. J. Miller.....	105, 355
Garments, Device for measuring and laying out.....	I. J. Ordway.....	98, 618
Garments, Fastening for.....	J. E. Dallan.....	106, 920
Garments, Hooded.....	A. Keating.....	110, 242
Garments, Instrument for draughting.....	U. L. Leete.....	107, 068
Garments, Pattern for measuring and laying out.....	F. Wetmore.....	110, 097

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Garments, Patterns for measuring the body for .....	M. Palmer, jr., and E. Willoughby .....	105, 486
Garter .....	C. E. Coester, jr., and J. L. Moore .....	106, 328
Garter .....	H. A. House .....	109, 617
Garter .....	H. A. House .....	109, 736
Garter .....	H. A. House .....	109, 737
Gas and air heating apparatus for metallurgic furnaces.	J. W. Ells .....	105, 558
Gas and water pipe plug .....	E. P. Schutt .....	100, 456
Gas and water stop-cock boxes, Top for .....	W. W. Pullis .....	109, 049
Gas-apparatus .....	J. E. Richard .....	108, 937
Gas, Apparatus for generating and burning .....	W. Stewart .....	105, 012
Gas, Apparatus for lighting and extinguishing .....	A. N. Allen and R. H. Dewey .....	101, 806
Gas, Apparatus for lighting by electricity .....	W. H. Kelly .....	100, 773
Gas, Apparatus for lighting .....	W. J. Morris and W. J. Reid .....	101, 491
Gas, Apparatus for lighting by electricity .....	W. W. Batchelder .....	103, 127
Gas, Apparatus for lighting by electricity .....	W. W. Batchelder .....	103, 231
Gas, Apparatus for lighting by electricity .....	H. T. Robbins .....	107, 105
Gas, Apparatus for lighting and extinguishing by electricity.	F. Bean .....	103, 434
Gas-apparatus for railroad-cars, &c. ....	J. S. Wood .....	105, 756
Gas-apparatus for railroad-cars, &c. ....	J. S. Wood .....	105, 757
Gas-apparatus for railroads .....	W. Foster, jr., and G. P. Ganster .....	105, 561
Gas-carbureter .....	J. L. Bartlett .....	107, 853
Gas, Clay retort for the manufacture of .....	F. C. Krause .....	110, 249
Gases, Apparatus for generating and burning, in metallurgic furnaces.	J. W. Ells .....	105, 557
Gases for fuel, &c., inflammable, Manufacture of .....	W. Elmer .....	106, 569
Gas-fittings, Machine for drilling and tapping .....	R. T. Crane .....	109, 731
Gas-fixture .....	D. Milne .....	107, 191
Gas-fixture, Extension .....	H. Krüger .....	101, 369
Gas-fixture, Extension .....	H. Coester .....	105, 911
Gas-fixtures, Device for raising and lowering .....	J. F. Pond .....	104, 197
Gas-fixtures, Trap-attachment for .....	J. B. Hyde .....	107, 264
Gas for head-lights, Apparatus for generating .....	H. S. Maxim .....	99, 927
Gas for heating, Apparatus for generating .....	L. Stevens .....	103, 302
Gas for illuminating purposes, &c., Manufacture of .....	J. Kidd .....	106, 699
Gas from coal, Apparatus for producing .....	T. O'Meara .....	106, 863
Gas from hydrocarbons, Apparatus for the manufacture of.	J. H. Smith .....	109, 848
Gas from hydrocarbons, Generating .....	J. R. Smedbury .....	109, 460
Gas from petroleum, Manufacture of .....	L. Stevens .....	100, 208
Gas-heater .....	R. George .....	108, 583
Gas, illuminating, Apparatus for generating .....	D. Davidson .....	99, 860
Gas, illuminating, Apparatus for the manufacture of .....	J. Dailey .....	103, 994
Gas, illuminating, Apparatus for the manufacture of .....	H. G. Ludlow .....	107, 203
Gas, illuminating, Apparatus for the manufacture of .....	A. W. Hall .....	109, 510
Gas, illuminating, Manufacture of .....	E. P. McCarthy .....	103, 218
Gas, illuminating, Manufacture of .....	E. D. McCracken .....	105, 351
Gas, illuminating, Manufacture of .....	E. A. and G. H. Pond and M. S. Richardson.	107, 809
Gas, illuminating, Manufacture of .....	W. Young and P. Braish .....	107, 848
Gas, illuminating, Method of producing .....	J. F. Boynton .....	110, 427
Gaskets for steam-packing, Mode of and device for making.	M. C. Gardner .....	105, 934
Gas-lighting apparatus, Electric .....	C. N. Ealer .....	107, 465
Gas-machine .....	S. R. Ball .....	98, 462
Gas-machine .....	T. G. Springer .....	100, 684
Gas-machine .....	W. W. Binny .....	104, 253
Gas-machine .....	J. P. Gallagher .....	105, 190
Gas-machine .....	J. H. Van Houten .....	109, 568
Gas-machine, Electro-hydrocarbon .....	H. J. Smith .....	101, 171
Gas, Machine for generating and carbureting .....	H. J. Hoyt .....	103, 465
Gas-machine, Pneumatic .....	D. Boyle .....	103, 836
Gas-meter, Dry .....	G. Lowen and S. H. Goldthorp .....	109, 230
Gasometer .....	T. E. Rowland .....	100, 559
Gas-pendants, Extensible .....	G. Warner .....	106, 895
Gas-purifier, Tray for .....	P. Munzinger .....	108, 167
Gas-regulator .....	P. Keller .....	98, 776
Gas-regulator .....	P. Keller .....	108, 023
Gas-regulator, Automatic .....	S. O. Trudell .....	107, 127
Gas-retort .....	J. Rigby and P. A. Palmer .....	103, 929
Gas-retort .....	E. D. McCracken .....	105, 350
Gas-retort .....	D. Davison .....	108, 009
Gas-retort and heating-furnace .....	G. H. Pond .....	110, 496
Gas-retort, Setting .....	T. Curley .....	103, 579
Gas-tar and ammoniacal liquor, Apparatus for separating.	E. D. McCracken .....	108, 499
Gas-tube for chandeliers, Extensible .....	H. L. McAvoy .....	100, 171
Gas used in heating vulcanizers, &c., Apparatus for automatically regulating the flow of.	J. M. Osgood .....	105, 971
Gas-works, Center-seal for .....	P. Munzinger .....	109, 540
Gas-works, Exhausting-apparatus for .....	S. R. Brick .....	101, 348

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Gate.....	I. C. Bennett.....	98, 841
Gate.....	C. S. Bonney.....	99, 822
Gate.....	C. H. Eggleston.....	100, 129
Gate.....	T. Ellison.....	100, 739
Gate.....	J. Hays.....	100, 759
Gate.....	A. Becraft.....	101, 570
Gate.....	F. Raymond.....	101, 765
Gate.....	S. Henry.....	102, 003
Gate.....	B. F. Dickey.....	102, 783
Gate.....	B. F. Dickey.....	103, 583
Gate.....	E. B. Scattergood.....	104, 210
Gate.....	J. D. Chambers.....	104, 555
Gate.....	J. D. Chambers.....	104, 556
Gate.....	J. H. Gustin.....	105, 067
Gate.....	T. Andrews.....	106, 763
Gate.....	J. H. Harnley.....	107, 254
Gate.....	J. J. Todlemire and J. D. Linnell.....	107, 638
Gate.....	S. Kepner.....	108, 031
Gate.....	S. Regan and E. Meusy.....	108, 186
Gate.....	F. Livings.....	108, 368
Gate.....	C. D. Read.....	108, 628
Gate.....	J. S. Covell.....	108, 764
Gate.....	W. C. Hooker.....	108, 786
Gate.....	W. Gause and J. C. Carryer.....	109, 198
Gate.....	E. Gemberling.....	109, 609
Gate.....	J. Wright.....	109, 704
Gate.....	R. T. Bowne.....	109, 713
Gate.....	H. R. Hoskins.....	110, 363
Gate and signal-apparatus for railroads, Electro-magnetic.	W. Robinson.....	105, 493
Gate, Automatic.....	S. Whittaker.....	102, 741
Gate, Automatic.....	P. A. Spicer and M. Crossman.....	105, 735
Gate, Automatic.....	J. B. Cotton.....	106, 917
Gate, Automatic.....	M. Orewiler.....	107, 801
Gate, Balance-pivot.....	D. Brown.....	102, 365
Gate, Bridge.....	J. Wilcke.....	100, 450
Gate, Bridge.....	M. Kirsch.....	109, 520
Gate, Farm.....	J. Dickason and G. W. D. Culp.....	98, 573
Gate, Farm.....	W. H. Wright.....	100, 484
Gate, Farm.....	C. Hart.....	100, 620
Gate, Farm.....	J. H. and P. J. Murphy.....	100, 787
Gate, Farm.....	M. Gunsheman.....	101, 998
Gate, Farm.....	J. Mayben.....	102, 569
Gate, Farm.....	H. Piper.....	102, 859
Gate, Farm.....	J. Dickason.....	104, 435
Gate, Farm.....	J. Pool.....	105, 366
Gate, Farm.....	G. J. Fiedler.....	105, 662
Gate, Farm.....	A. Hathaway.....	106, 156
Gate, Farm.....	C. W. Saladeo.....	106, 411
Gate, Flood.....	J. J. Kimball.....	98, 979
Gate, Flood.....	A. L. Noble.....	101, 651
Gate, Flood.....	T. H. Breed.....	107, 159
Gate, Flood.....	J. Campbell and A. Watson.....	107, 639
Gate, Flood.....	S. Rowland and T. C. Tipton.....	109, 252
Gate, Flood.....	N. Hineckley.....	109, 734
Gate for railway-crossings.....	J. H. Clark.....	105, 429
Gate-hinge, auger, Casting.....	B. Ronx.....	99, 712
Gate-operating apparatus, Electro-magnetic.....	W. Robinson.....	105, 494
Gate, Railway.....	S. M. Snyder.....	100, 943
Gate, Railway.....	R. Ramsey and C. Stafford.....	101, 311
Gate, Railway.....	E. Woodbury.....	103, 670
Gates, Fastening.....	J. Lintner.....	103, 629
Gates, Latch for.....	E. Barks and L. H. Emmons.....	107, 589
Gate, sluice, Automatic.....	J. Keplinger.....	105, 220
Gates, Railway.....	J. B. Rittenhouse and J. Collins.....	104, 355
Gate, Suspension.....	E. Chadderdon.....	105, 170
Gate, Water.....	M. Hays.....	100, 623
Gauge, Adjustable.....	T. E. Warren.....	106, 099
Gauge and divider.....	G. Kenny.....	98, 504
Gauge-attachment for tinmiths' shears.....	O. W. Stow.....	104, 076
Gauge, Axle.....	R. C. Kelly.....	106, 373
Gauge, Button-shank.....	J. F. Russell.....	102, 436
Gauge, Carpenters'.....	H. P. Sisson.....	110, 596
Gauge, Clapboard.....	J. S. Biddlecom.....	102, 649
Gauge, Clapboard.....	E. Horten.....	103, 210
Gauge, Clapboard.....	A. Deyo.....	103, 010
Gauge-cock.....	J. B. Christoffel.....	100, 951
Gauge-cock.....	L. F. Smith.....	105, 533
Gauge, Duplex-pressure.....	P. B. Hovey.....	104, 593
Gauge for cutting bias pieces of cloth.....	S. T. Taylor.....	106, 741



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Gauge for gang-saws.....	O. C. Meigs.....	109, 643
Gauge for paper-cutting machines.....	C. C. Child.....	99, 759
Gauge for printing-presses.....	A. Campbell.....	105, 638
Gauge for tobacco-cutter.....	W. N. C. Wilson.....	100, 959
Gauge for turning clock-work.....	H. F. Henderson and J. E. Ladd.....	110, 460
Gauge-pin for tympan-sheets.....	R. W. Thing.....	105, 518
Gauge, Pressure.....	J. W. Maloy.....	101, 636
Gauge, Pressure.....	C. Liedke.....	106, 180
Gauge, pressure, Recording.....	J. B. Edison.....	106, 345
Gauge-rod.....	E. S. Prime.....	101, 309
Gauge, Saw.....	W. Clemson.....	101, 229
Gauge, Spooling.....	R. H. Norris.....	100, 793
Gauge, Steam.....	J. P. Holt.....	105, 685
Gauge, Steam and safety-valve.....	I. N. Whittlesey.....	109, 086
Gauge, water, Maximum and minimum.....	G. J. Firmin.....	106, 801
Gauge, Weather-board.....	W. E. Stoddard.....	98, 813
Gauge, Weather-board.....	J. M. Milbollin.....	108, 376
Gear-cutting machine.....	W. Sellers.....	99, 356
Gear-cutting machine.....	C. Van Haagen.....	110, 406
Gear for carpet-sweeping machines.....	G. F. Taylor.....	106, 429
Gearing, Carriage.....	C. Custer.....	107, 663
Gearing, Driving.....	G. B. Hamlin.....	101, 872
Gearing for clothes-wringer.....	G. C. Wright.....	103, 269
Gearing for machinery.....	T. M. Millet, sr.....	110, 151
Gearing for metal-planers.....	W. M. Barr.....	108, 955
Gearing, Frictional.....	D. H. Chamberlain.....	100, 977
Gearing, Friction-wheels for.....	W. D. Andrews.....	100, 839
Generating gas for heating, Apparatus for.....	L. Stevens.....	108, 302
Generator and furnace, Steam.....	J. Amory.....	103, 408
Generator and hot-water apparatus, Steam.....	J. Rigby and P. A. Palmer.....	108, 394
Generator, Gas.....	A. L. McKay.....	102, 293
Generator, Gas.....	E. Doty.....	102, 784
Generator, Gas.....	T. B. Fogarty.....	103, 036
Generator, gas, Portable.....	W. Snodgrass.....	100, 080
Generators, steam, Circulating tube for.....	J. C. Stevens.....	99, 998
Generators, Feed-water purifier for.....	H. K. Hazlett.....	100, 144
Generator, Steam.....	F. W. Webb.....	98, 726
Generator, Steam.....	J. B. Root.....	98, 802
Generator, Steam.....	J. Jacobs.....	100, 041
Generator, Steam.....	C. J. Stolbrand.....	100, 085
Generator, Steam.....	J. Harrison, jr.....	100, 141
Generator, Steam.....	W. H. Ivens.....	100, 411
Generator, Steam.....	J. M. Clark.....	100, 433
Generator, Steam.....	H. A. V. Post.....	100, 443
Generator, Steam.....	G. P. Hunt.....	100, 531
Generator, Steam.....	O. Clarke.....	100, 983
Generator, Steam.....	H. E. Curry.....	101, 233
Generator, Steam.....	J. M. Clark.....	101, 434
Generator, Steam.....	M. Ritchey.....	101, 767
Generator, Steam.....	J. F. Belleville.....	101, 973
Generator, Steam.....	J. C. Ludwig.....	102, 287
Generator, Steam.....	W. H. Law.....	103, 059
Generator, Steam.....	P. Riley.....	103, 081
Generator, Steam.....	G. O. Sampson.....	103, 087
Generator, Steam.....	D. Amsdell.....	103, 120
Generator, Steam.....	W. P. Skiffington.....	103, 248
Generator, Steam.....	A. L. Pennock.....	103, 363
Generator, Steam.....	C. and A. Spring.....	103, 793
Generator, Steam.....	J. Loader and W. H. Child.....	103, 902
Generator, Steam.....	T. S. La France.....	104, 167
Generator, Steam.....	J. Nason and D. Saunders.....	104, 188
Generator, Steam.....	S. D. Tillman.....	104, 511
Generator, Steam.....	S. L. Wiegand.....	104, 522
Generator, Steam.....	W. Arthur.....	104, 533
Generator, Steam.....	W. Baxter.....	104, 820
Generator, Steam.....	J. A. Miller.....	104, 879
Generator, Steam.....	R. Patterson.....	105, 243
Generator, Steam.....	G. A. Stone.....	105, 275
Generator, Steam.....	N. H. Barbour.....	105, 626
Generator, Steam.....	J. Carroll.....	105, 642
Generator, Steam.....	E. B. Siutzenich.....	106, 222
Generator, Steam.....	J. A. Miller.....	106, 383
Generator, Steam.....	D. A. Morris.....	106, 392
Generator, Steam.....	J. M. Clark.....	106, 662
Generator, Steam.....	T. Sharp and C. S. S. Griffin.....	106, 965
Generator, Steam.....	J. C. Kilgore.....	107, 181
Generator, Steam.....	W. W., R., and N. Weston and B. Brett.....	107, 840
Generator, Steam.....	S. B. B. Nowlan.....	108, 174
Generator, Steam.....	T. S. La France.....	108, 604
Generator, Steam.....	J. T. Rich.....	108, 925
Generator, Steam.....	J. T. Rich.....	108, 936

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Generator, Steam .....	J. Houtt .....	109, 616
Generator, Steam .....	J. A. Miller .....	109, 645
Generator, Steam .....	E. Neumann .....	109, 652
Generator, Steam .....	W. G. Savage .....	109, 765
Generator, Steam .....	L. R. Cornell .....	109, 807
Generator, Steam .....	G. W. Shields .....	110, 298
Generator, steam, Sectional .....	J. Griffith, G. W. Wundrum, and T. M. Muller .....	93, 490
Generator, steam, Sectional .....	H. W. Evans .....	102, 522
Generator, steam, Sectional .....	H. Whittingham .....	108, 075
Generator, steam, Sectional .....	B. Densmore .....	103, 333
Generator, steam, Sectional .....	J. Griffith and G. W. Wundrum .....	108, 703
Generator, steam, Water-indicator for .....	W. C. Bell .....	98, 464
Giffard-injector .....	J. Gresham .....	101, 858
Gin for linting cotton .....	G. W. Payne .....	106, 613
Glass-blowers, Spring-clamp for .....	T. Wightman .....	102, 899
Glass, Embellishment of .....	E. Ingraham .....	109, 626
Glass, Heating-table for silvering .....	H. B. Walker .....	108, 413
Glass jars, Machine for removing the "blow-over" on .....	J. Chambers .....	99, 160
Glass, Manufacture of .....	C. H. Jenkins .....	101, 737
Glass, Mode of inserting, in vault-lights .....	Z. Cobb .....	107, 663
Glass signs, show cards, &c., Process of making .....	C. Flammer .....	100, 881
Glass, Silvering .....	H. B. Walker .....	110, 408
Glass vessels to metal bases, Mode of Securing .....	A. French .....	105, 061
Glassware and metal-steam connection .....	C. L. Knecht and T. Adams .....	110, 049
Glassware, Mold for making .....	J. B. Lyon .....	110, 056
Globe, Folding-card .....	D. Townsend .....	101, 185
Globe for gas-lights .....	C. Collier .....	109, 589
Globes, maps, &c., for schools, Construction of .....	J. De W. Brinkerhoff and J. Duthie .....	109, 581
Glove .....	J. H. Putnam .....	101, 506
Glove .....	J. L. Whitten .....	103, 626
Glove .....	D. S. Hulett .....	105, 637
Glove .....	W. S. Tooker .....	108, 849
Glove .....	W. S. Tooker .....	103, 850
Glue, Manufacture of .....	W. Adamson .....	106, 448
Gluing-hopper .....	J. W. Campbell .....	109, 494
Glue liquid .....	W. Horwitz .....	109, 010
Glue, Manufacture of .....	A. Dietz .....	103, 852
Glue or cement .....	N. S. Whipple .....	101, 520
Glycerine from soap-makers' spent lyes, Process of obtaining .....	B. T. Babbitt .....	107, 324
Gold and silver from pulverized quartz, Separating .....	E. A. Hyde .....	99, 571
Gold and silver from solutions, Apparatus for precipitating .....	W. S. Loughton .....	103, 158
Gold and silver ores, Apparatus for saving mercury from the washings of .....	W. Spicer .....	105, 010
Gold, Apparatus for saving .....	C. Schofield .....	102, 870
Gold, Collecting, from ores .....	A. F. W. Partz .....	98, 518
Gold-foil for dental purposes, Manufacture of .....	U. K. Mayo .....	108, 606
Gold for dentists' use, Preparing .....	G. J. Pack .....	103, 327
Gold for dentists' use, Preparing .....	R. S. Williams .....	101, 524
Goods, woolen, Dyeing .....	W. S. Sanborn .....	108, 523
Gengo .....	J. F. Wood .....	102, 459
Governor .....	J. L. Todd .....	108, 848
Governor for steam-engine .....	H. D. McMaster and A. Dale .....	101, 487
Governor for steam-engine .....	A. J. Pevey .....	106, 400
Governor for steam-engine .....	J. D. Lynde .....	103, 162
Governor for steam-engine .....	R. K. Huntton .....	109, 013
Governor for steam-engines .....	T. Moore .....	100, 785
Governors for steam and other enginery .....	J. Bell .....	99, 751
Governor, Steam .....	A. F. Reeder .....	105, 847
Governor, Steam-engine .....	W. Smith .....	100, 203
Governor, Steam-engine .....	H. Boardman .....	100, 847
Governor, Steam-engine .....	W. H. Place .....	105, 841
Governor, Water .....	A. W. Woodward .....	103, 813
Grading-machine .....	J. Preston .....	102, 706
Graduated scale, Elastic .....	R. M. Bache .....	101, 411
Grafting, Method of .....	D. S. Wagener .....	107, 427
Grahamite, anhydrous, Preparing .....	H. Wurz .....	99, 740
Grahamite, Chemical product called fused or anhydrous .....	H. Wurz .....	99, 741
Grain and fruit cleaner .....	S. A. Slocomb .....	109, 680
Grain and seed cleaner .....	N. M. Bowen .....	107, 860
Grain and seed separator .....	R. Hawkins .....	105, 451
Grain and seed separator, Fan-case for .....	C. L. Allen .....	105, 158
Grain and straw carrying attachment for separators .....	B. and B. F. Jackson .....	109, 532
Grain, Apparatus for bagging and elevating .....	J. S. Hasbrouck .....	100, 887
Grain, Apparatus for binding .....	G. W. Chandler .....	99, 404
Grain, Apparatus for cooling .....	S. A. Stebbins .....	102, 175
Grain, Apparatus for decorticating, separating, and drying .....	A. J. Glas .....	107, 480

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Grain, Apparatus for raking and binding .....	T. K. Griffith .....	106, 357
Grain-bin .....	F. Raymond .....	105, 367
Grain-bin .....	F. Raymond .....	106, 961
Grain-binder .....	W. D. Harrah, I. M. Gifford, and E. T. Johnston .....	102, 815
Grain-binder .....	G. H. Spaulding .....	103, 673
Grain-binder .....	W. B. Oglesby .....	104, 487
Grain-binder .....	W. H. Payne .....	105, 974
Grain-binder .....	D. McPherson .....	107, 797
Grain-binder .....	G. A. Scribner .....	107, 823
Grain-binder .....	W. Lottridge .....	107, 933
Grain-binder .....	A. S. Hoyt .....	110, 138
Grain-binder .....	L. F. Parker .....	110, 492
Grain-binder .....	F. W. Randall .....	110, 498
Grain-cleaner .....	C. Jones .....	98, 975
Grain-cleaner .....	C. Perry and J. E. Wheat .....	100, 441
Grain-cleaner .....	C. Perry .....	103, 922
Grain cleaner and separator .....	W. Gardner .....	104, 728
Grain-conveyor .....	O. Johnson and W. O. Wall .....	100, 154
Grain-drier .....	B. F. Sturtevant .....	100, 212
Grain-drier .....	B. F. Sturtevant .....	100, 235
Grain-drier .....	I. Y. Munn .....	101, 759
Grain-drier .....	R. Milburn and T. Browning .....	105, 709
Grain-drier .....	H. Merrill .....	109, 536
Grain-drill teeth .....	L. Bickford .....	102, 081
Grain-dump .....	W. M. Hall .....	107, 040
Grain fanning and separating machine .....	J. I. Smith and W. H. Nicodemus .....	104, 784
Grain, Fermenting alcoholic liquors from .....	J. Ellingwood .....	108, 773
Grain in bulk, Treating and preserving .....	C. F. Parrott .....	105, 720
Graining, Method of .....	J. J. Callow .....	104, 929
Grain lifter and harvester .....	W. M. Jackson .....	104, 460
Grain, Machine for binding .....	T. Fowler .....	103, 861
Grain, Machine for cleaning and separating .....	F. Wegmann .....	108, 541
Grain, Machine for cutting and binding .....	S. D. Locke .....	106, 945
Grain, Machine for decorticating and drying .....	E. Skelly .....	106, 627
Grain, Machine for scouring .....	B. T. Trimmer .....	101, 946
Grain, Method of binding .....	T. Fowler .....	113, 862
Grain plaster, &c., Apparatus for sowing .....	O. W. Smith .....	106, 216
Grain-register .....	C. Lamb .....	109, 522
Grain-register .....	W. Z. Taylor .....	110, 605
Grain, rice, coffee, &c., Machine for hulling and scouring .....	L. H. Whitney .....	107, 644
Grain, Riddle for separating .....	M. M. Cooper and J. W. Donaldson .....	109, 716
Grain-scourer .....	V. Weismantel .....	101, 950
Grain-scourer .....	I. N. Harshbarger .....	107, 486
Grain-scourer .....	A. Smith .....	110, 301
Grain-scouring machine .....	W. McLaughlin .....	106, 184
Grain-screen, Revolving .....	F. Mills .....	106, 949
Grain-separator .....	D. Ladd .....	99, 093
Grain-separator .....	H. Burdick .....	99, 835
Grain-separator .....	H. A. Hammer .....	99, 903
Grain-separator .....	E. Davis .....	100, 379
Grain-separator .....	M. H. Smith .....	101, 324
Grain-separator .....	L. Boyer .....	104, 664
Grain-separator .....	O. Stone .....	103, 680
Grain-separator .....	A. Gaar .....	104, 571
Grain-separator .....	J. D. Brunner and E. R. J. Uebiroth .....	106, 994
Grain-separator .....	H. Cook .....	107, 338
Grain-separator .....	F. A. Begole .....	107, 856
Grain-separator .....	A. Duns .....	108, 120
Grain-separator .....	W. M. Redd .....	108, 391
Grain-separator .....	J. G. Evans .....	108, 577
Grain-separator .....	F. Swift and M. Standish .....	109, 155
Grain-separator .....	H. Raymond .....	109, 839
Grain-separator .....	J. W. Donaldson .....	110, 445
Grain separator and scourer .....	W. C. Knox .....	106, 177
Grain-separator, Platform-attachment for .....	J. Whiteside .....	98, 829
Grain-sieve and oat-extractor .....	T. Follett .....	110, 351
Grain-thresher .....	H. Ries .....	106, 662
Grain thrasher, separator, and cleaner .....	E. M. Birdsall .....	110, 542
Grain-threshing and clover-hulling machine .....	M. Hubbell .....	105, 945
Grain-wheel of harvesters, Means for adjusting .....	J. D. Wright .....	100, 481
Grass, Apparatus for cutting, under water .....	P. J. Stone .....	105, 996
Grass-seed separator for mangers .....	D. R. Dixon .....	106, 562
Grape-trellis .....	W. M. Heath .....	109, 207
Grapple .....	N. P. and N. E. Allen .....	110, 329
Grapple .....	S. Rogers .....	100, 330
Grate .....	H. Mulford .....	99, 584
Grate .....	F. Glick and U. Keck .....	107, 899
Grate and back for cooking-stoves .....	J. B. Shusser and W. B. Meech .....	104, 070
Grate and fire-pot for heating stove .....	P. J. Shopp .....	104, 212

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Grate-bar .....	W. McMonnies .....	99, 582
Grate-bar .....	H. Collinson .....	99, 640
Grate-bar .....	T. S. Davis .....	100, 016
Grate-bar .....	W. Kearney .....	103, 948
Grate-bar .....	M. Hodgson .....	103, 942
Grate-bar .....	J. Yocum, jr. ....	103, 285
Grate-bar .....	H. Ball .....	109, 711
Grate bar and bearer .....	W. Kearney .....	103, 796
Grate-bar, Furnace .....	J. Cone and W. K. Kelly .....	99, 642
Grate-bars for steam-generators .....	M. D. Wellman .....	101, 795
Grate-bars, Rotary .....	D. Byard .....	103, 327
Grate, Coal .....	I. Packard .....	110, 157
Grate, Coal-vault .....	G. W. Scott .....	103, 298
Grate, Drift-receiving .....	W. N. Reed .....	109, 452
Grate-fender .....	S. S. Bent .....	103, 295
Grate, Fire .....	M. Peckham .....	106, 502
Grate, Fire-place .....	W. E. Whitehurst .....	99, 384
Grate, Fire-place .....	G. H. McElevy .....	99, 581
Grate, Fire-place .....	E. D. Merriek .....	101, 296
Grate, Fire-place .....	J. A. Crawford .....	104, 836
Grate, Fire-place .....	E. Norman .....	103, 234
Grate, Fire-place .....	S. S. Bent .....	103, 297
Grate, Fire-place .....	F. S. Bissell .....	106, 772
Grate, Fire-place .....	J. Hackett .....	107, 483
Grate, Fire-place .....	J. S. Runyan .....	109, 550
Grate, fire-place, Back for .....	S. S. Bent .....	103, 296
Grate for fire-place .....	A. Brase and L. Salladey .....	103, 134
Grate for furnace .....	R. A. Hutchinson .....	107, 780
Grate-front and oven, Combined .....	J. W. Gillespie and W. Hughes .....	104, 136
Grate, Furnace .....	A. L. Pennoek .....	107, 715
Grate, Furnace .....	A. B. Weeks .....	107, 987
Grater .....	L. Schmidt .....	100, 819
Grater .....	W. Kinyon and J. Maxson .....	101, 023
Grater .....	J. W. Smith .....	104, 071
Grater, Revolving .....	S. S. Wilcox and E. J. Colegrove .....	99, 042
Grater, Vegetable .....	S. M. Wilson .....	93, 832
Grate, Sewer .....	Z. L. Bragdon .....	101, 575
Grate, Stove .....	M. D. Wellington .....	99, 041
Grate, Stove .....	G. Froh .....	100, 624
Grate, Stove .....	E. C. Loud .....	100, 536
Grate, Stove .....	H. Miner .....	102, 143
Grate, Stove .....	L. Stuck .....	102, 850
Grate, Stove .....	R. Soliday .....	103, 098
Grate, Stove .....	P. Dempsey .....	103, 307
Grate, Stove .....	A. Winterburn .....	104, 242
Grate, Stove .....	L. Bridge .....	104, 258
Grate, Stove .....	L. Gleason .....	104, 844
Grate, Stove .....	W. Teamer .....	103, 384
Grate, Stove .....	R. Ham .....	106, 154
Grate, Stove .....	R. Ward .....	106, 521
Grate, Stove .....	W. Quay and E. M. Hinsdale .....	107, 197
Grate, Stove .....	J. M. Thatcher .....	109, 968
Grate, Stove or furnace .....	G. A. Wing .....	106, 442
Grate, Tubular .....	B. Garvin and R. J. Pettibone .....	107, 356
Grating, sifting, and slicing machine .....	J. F. Shepard .....	103, 378
Gravel, Medical compound for cure of .....	T. G. Eiswald .....	106, 474
Grease from waste leather, Removing .....	J. P. Rust .....	103, 191
Green-houses, Water-heater for .....	S. E. Chubbuck .....	100, 013
Gridiron-case .....	M. V. Nobles .....	101, 632
Gridiron for stove and range .....	J. M. Read .....	104, 497
Grinder, Flock .....	R. Aldrich .....	104, 813
Grinder for cleaning castings .....	G. Miller .....	103, 711
Grinder for harvester-cutters .....	S. O. and P. W. Vaughan .....	107, 955
Grinder for rattler for cleaning castings .....	G. Miller .....	100, 175
Grinding and polishing lenses, &c., Machine for .....	H. D. Knight .....	103, 325
Grinding apparatus .....	L. Washburn .....	103, 392
Grinding-machine .....	T. H. Worrall .....	101, 559
Grinding-mills, Feeding-apparatus for .....	J. D. Wheelpley .....	102, 997
Grinding objects cylindrically, Machine for .....	J. M. Poole .....	99, 600
Grinding-rest for twist-drills .....	S. A. Morse .....	104, 982
Grindstone or tool-sharpener .....	U. Faris and A. Miller .....	107, 763
Grindstone, Parlor .....	J. M. Simpson .....	106, 413
Grindstones, Machine for cutting out .....	J. E. Mitchell .....	103, 912
Grindstones, Machine for splitting .....	J. McDermott .....	102, 633
Grindstones, Method of hanging .....	H. M. Church .....	107, 602
Gripper and gauge for printing-presses .....	H. Barth .....	99, 749
Grip-pulley .....	A. S. Hallidie .....	100, 140
Grooving-machine .....	W. G. Raoul .....	99, 350
Grooving-machine .....	J. W. Smith .....	103, 943
Grooving-machine for sheet-metal .....	C. H. Raymond .....	99, 592

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Ground-pulverizer .....	E. A. Olleman .....	106, 397
Grubbing-implement .....	J. Sattazhn .....	103, 088
Guano-distributor .....	W. E. Martin .....	107, 937
Guano-distributor .....	E. R. Stedman .....	107, 975
Guano-distributor and seed-sower .....	B. F. Hinckley .....	108, 262
Guano-distributing machine .....	G. W. Sizer and W. M. Owen .....	107, 111
Guano, Drying .....	E. P. Baugh .....	102, 648
Guano, Treatment of, and the manufacture of fertilizers.	C. Morfit .....	106, 851
Guard for ax-handles .....	L. B. Hoit .....	165, 205
Guard for carpet-sweeper .....	A. J. Knight .....	103, 344
Guard for carriage-steps .....	P. H. and R. J. P. Goodwin and G. L. Gamage.	98, 483
Guard for machine for pitching waste .....	C. L. Dean .....	98, 570
Guide for planing-machine .....	F. Keagey .....	98, 600
Gun-barrels, Coloring .....	J. S. Howard .....	106, 823
Gun-carriage .....	J. C. Houel .....	98, 585
Gun-carriage .....	J. W. Wilson .....	100, 482
Gun-carriage .....	J. Ericsson .....	100, 514
Gun-carriage .....	A. F. Potter .....	107, 099
Gun-charger .....	H. Kahn .....	108, 359
Gun-lock .....	N. C. Lock .....	98, 781
Gun-lock .....	L. Hailer .....	105, 799
Gun-lock .....	J. Deutz .....	106, 337
Gun-lock .....	C. B. Holden .....	109, 128
Gun-lock .....	R. D. Hay .....	109, 514
Gun-lock .....	E. B. Hendee .....	110, 360
Gun, Magazine .....	N. H. Ambler .....	106, 246
Gun-sight .....	H. B. Barber .....	101, 568
Gun-wiper .....	C. F. Gillette .....	99, 557
Gun-wiper .....	H. Greve .....	101, 997
Gutter-machine, Tin .....	J. N. Adams .....	102, 465
Gymnastic-apparatus .....	W. Hanlon .....	98, 587
Gymnastic-apparatus .....	W. Hanlon .....	98, 588
Gymnastic-apparatus .....	J. Smith .....	108, 401
H.		
Hair-clipping device .....	J. C. Wilson .....	109, 479
Hair, curled, Machine for picking .....	N. L. Cole .....	100, 604
Hair-curler .....	J. W. Kenney and J. H. Adams .....	107, 920
Hair curler and crimper, Combined .....	E. Matteson .....	105, 822
Hair, Device for curling .....	S. L. Tibbals .....	105, 519
Hair, Device for curling and dressing .....	P. Ceredo .....	105, 041
Hair, Device for curling and dressing .....	P. Ceredo .....	107, 536
Hair from the warp in hair-cloth, Process of separating .....	D. Whiteley .....	109, 857
Hair, Machine for beating and cleaning .....	G. P. Holloway and W. J. Huey .....	109, 903
Hair-medicine .....	A. J. Fletcher .....	101, 722
Hair-pin .....	W. Wickersham .....	106, 009
Hair-restorative .....	A. C. Maxfield .....	110, 058
Hair-roll .....	J. H. Vogt and G. Dietzel .....	107, 130
Hair-spring for watches, Testing-apparatus for .....	J. Logan .....	105, 467
Halter .....	W. M. Harris .....	100, 031
Halter .....	R. Porter .....	109, 937
Hame-attachment .....	C. H. Easto .....	102, 100
Hame-fastener .....	C. H. Miller .....	101, 642
Hame-fastening .....	S. D. G. Niles .....	107, 528
Hame for harness .....	J. Letchworth .....	102, 138
Hames .....	G. J. Letchworth .....	98, 834
Hames-fastener .....	A. Gale and H. R. Johnson .....	110, 226
Hames, Hame-tug for .....	N. Botsford .....	104, 106
Hammer .....	J. P. Radley .....	99, 705
Hammer .....	O. Rock .....	103, 660
Hammer, Nail .....	E. S. Morton .....	103, 914
Hammer, Riveting .....	H. A. Seymour and W. H. Nettleton .....	102, 871
Hammer, Steam .....	O. C. Ferris and F. B. Miles .....	104, 948
Hammer-strap .....	W. J. Lewis .....	107, 929
Hand-barrow .....	M. S. Scofield .....	99, 009
Handle for barrels, &c. ....	M. S. Scofield .....	110, 502
Handle for boat-hooks, &c. ....	F. F. Bibber .....	103, 067
Handle for canes and umbrellas .....	A. Wanner .....	108, 218
Handle for casket .....	A. McGuire .....	106, 456
Handle for children's carriages .....	R. G. Elder .....	99, 420
Handle for children's carriages, &c. ....	W. E. Crandall .....	106, 033
Handle for cross-cut saw .....	E. Andrews .....	104, 064
Handle for cross-cut saws .....	E. M. Boynton .....	99, 825
Handle for "edge-keys" .....	R. A. Woodberry .....	103, 812
Handle for knives .....	J. B. Bailey .....	103, 278
Handle for knives, &c. ....	M. Chapman .....	106, 254
Handle for knives, forks, &c. ....	W. Sanderson and J. J. De Barry .....	99, 242
Handle for table and other cutlery .....	M. Chapman .....	107, 223



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Handle of folding-umbrella .....	L. Gehlen .....	100,522
Handle of table-knife .....	J. A. White .....	108,740
Handle or pull, Composition .....	W. B. Gleason .....	101,119
Handles, &c., Finishing and bleaching .....	D. H. Taylor .....	108,846
Hand-rubber for washing clothes .....	G. F. J. Colburn .....	100,603
Hand-saw blades, Machine for grinding .....	D. M. Mefford .....	106,071
Hand-screw and clip for splicing broken carriage-ties .....	A. B. Sheaffer .....	101,053
Hand seed-drill and cultivator, Combined .....	S. D. Lucas .....	109,916
Hand-stamp .....	J. C. Gaston .....	104,444
Hand-stamp .....	L. Lehman .....	104,976
Hand-stamp .....	W. E. Osborn .....	106,398
Hand-stamp .....	W. F. Corne .....	106,665
Hand-stamp .....	M. P. Norton .....	106,716
Hand-stamp .....	H. W. Safford .....	107,964
Hand-stamp .....	H. H. H. Grosskopf .....	108,351
Hand-stamp .....	A. Zantinger .....	109,792
Hand-stamp .....	D. W. Fish .....	109,814
Hand-stamp .....	E. S. Goodman .....	100,031
Hand-stamp canceler .....	B. Van Kleeck .....	102,731
Hanger for shafting .....	W. W. Carey and G. W. Harris .....	99,156
Hanging-basket .....	J. H. O'Neil .....	101,907
Hank for sails .....	G. Kirtland .....	104,601
Hard rubber, Manufacture of .....	J. B. Newbrough .....	100,435
Hard water, Device for removing lime from .....	K. Frazer .....	106,759
Harness .....	E. L. Bassett .....	101,569
Harness .....	L. Whitehead .....	103,264
Harness .....	L. Whitehead .....	104,806
Harness, Bit for .....	B. S. Roberts .....	109,145
Harness, Breast-strap fastening for .....	J. H. Martin .....	104,475
Harness, Breast-strap protector for .....	L. R. Ward .....	107,134
Harness, Draught .....	G. Chamberlin .....	107,335
Harness-fastening .....	S. S. Little and H. P. Prescott .....	101,141
Harness, Hames-cap for .....	L. Bonine .....	106,111
Harness, Hame for .....	W. Duncan .....	106,341
Harness-hook and loop-shield .....	W. H. Morgan .....	107,087
Harness, leather, &c., Water-proof composition for .....	J. Herold .....	101,461
Harness, Leather-fastening for .....	T. G. Morse .....	98,514
Harness-makers' edging-tool .....	F. M. Patterson and H. P. Miller .....	105,242
Harness, Padding for .....	J. Cornac and A. Stobbs .....	106,321
Harness, Pad-plate for .....	C. Gahr .....	103,321
Harness-ring .....	H. N. Eames .....	100,384
Harness-saddle .....	J. L. Van Wert .....	98,899
Harness-saddle .....	C. K. Marshall .....	102,953
Harness-saddle .....	V. Borst .....	103,132
Harness-saddle .....	E. E. Hardy .....	104,023
Harness-saddle .....	V. Borst .....	109,108
Harness-saddle tree .....	G. Pennoyer .....	103,495
Harness-saddle tree .....	P. H. Wiedersum .....	107,813
Harness, Trace-holder for .....	R. M. Dill .....	106,037
Harness, Trace-hook and clip for .....	W. H. Morgan .....	107,086
Harness-trimmings, Mode of covering .....	C. M. Theberath .....	99,032
Harrow .....	M. Vanbibber .....	98,531
Harrow .....	H. and C. Shirk .....	99,719
Harrow .....	J. G. Burcham .....	101,350
Harrow .....	W. Tuttle .....	101,517
Harrow .....	W. J. Burdick .....	105,775
Harrow .....	A. Friedmann .....	106,046
Harrow .....	G. M. Ellis .....	106,677
Harrow .....	C. Thayer and L. L. Thomas .....	106,742
Harrow .....	S. and A. Woodart .....	106,908
Harrow .....	W. P. Jones .....	107,057
Harrow .....	A. Lewis .....	107,269
Harrow .....	J. Dingman .....	107,304
Harrow .....	J. Mellinger .....	108,279
Harrow .....	J. Dawson .....	108,630
Harrow .....	J. J. Austin .....	108,910
Harrow .....	J. M. Harper .....	110,133
Harrow .....	D. L. Japies .....	110,142
Harrow .....	D. B. Conover .....	110,344
Harrow, Adjustable .....	A. Havens .....	108,478
Harrow and cultivator .....	J. Lerch .....	106,376
Harrow and earth-cutter .....	J. Schroeffel and W. Dell .....	101,522
Harrow and roller, Combined .....	T. Bailey .....	106,765
Harrow and roller, Combined .....	J. M. Blenkenbeker .....	106,539
Harrow and roller, Combined .....	F. A. Dunn and J. McKibben .....	107,461
Harrow and seeder, Combined .....	E. Stoner .....	109,269
Harrow and seeder combined, Sulky .....	A. L. Taveau .....	101,540
Harrow and shovel cultivator, Combined .....	A. B. Baum .....	105,770
Harrow, cultivator wheelbarrow, and sled, Combined .....	J. R. Wagner .....	106,004
Harrow, Revolving .....	H. H. Monroe .....	100,547
Harrow, roller, and seeder, Combined .....	A. Powell .....	98,627

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Harrow, roller, and seed-sower, Combined .....	C. E. Pierce .....	99, 946
Harrow, Rotary .....	G. Collins .....	107, 337
Harrow, Sulky .....	J. A. Casey .....	104, 423
Harrow-teeth .....	A. R. Kinney .....	107, 506
Harrow-teeth .....	S. W. Corbin .....	109, 719
Harrow-teeth, Machine for making .....	J. Morgan .....	104, 186
Harrow, Wheel .....	E. R. Powell .....	109, 754
Harrow, Wheeled .....	A. L. P. Vairin .....	98, 647
Harvester .....	M. H. Ripley .....	98, 635
Harvester .....	J. F. Crawford .....	98, 671
Harvester .....	C. J. Miller and B. Hersting .....	98, 700
Harvester .....	C. R. Brinkerhoff .....	98, 737
Harvester .....	W. G. Beels .....	98, 910
Harvester .....	P. A. Tobey .....	100, 817
Harvester .....	J. B. McCormick .....	101, 031
Harvester .....	W. F. Goodwin .....	101, 120
Harvester .....	L. J. McCormick and W. R. Baker .....	101, 618
Harvester .....	E. B. Rice .....	101, 659
Harvester .....	W. A. Kirby .....	102, 131
Harvester .....	C. Clapp .....	102, 776
Harvester .....	J. Kline .....	103, 835
Harvester .....	C. N. Owen .....	103, 490
Harvester .....	T. Loring .....	103, 633
Harvester .....	J. Seibel .....	104, 067
Harvester .....	J. H. Elward .....	104, 290
Harvester .....	J. L. McCormick, W. B. Baker, and L. Erpelding .....	104, 331
Harvester .....	W. N. Whiteley .....	104, 386
Harvester .....	A. P. Ayeres .....	104, 407
Harvester .....	J. C. Miles .....	104, 482
Harvester .....	J. G. Perry .....	104, 489
Harvester .....	J. G. Perry .....	104, 490
Harvester .....	J. Birch and A. Crosby .....	104, 695
Harvester .....	W. B. Johns and W. J. Read .....	104, 852
Harvester .....	H. Mews .....	104, 978
Harvester .....	S. T. Lamb and W. N. Whiteley .....	105, 343
Harvester .....	W. N. Whiteley .....	105, 394
Harvester .....	W. N. Whiteley .....	105, 395
Harvester .....	C. W. and B. F. Witt .....	105, 399
Harvester .....	A. Rank .....	105, 597
Harvester .....	H. C. Velie .....	105, 612
Harvester .....	I. H. Palmer .....	105, 973
Harvester .....	V. S. Barber .....	106, 535
Harvester .....	J. S. Truxel .....	106, 891
Harvester .....	D. D. Whitker .....	106, 903
Harvester .....	L. Hall .....	107, 039
Harvester .....	H. H. Nestertu .....	107, 193
Harvester .....	M. and W. P. Pales .....	107, 214
Harvester .....	A. J. Haswell and J. W. Irwin .....	107, 487
Harvester .....	A. H. Wagner .....	108, 069
Harvester .....	W. T. Miller .....	108, 716
Harvester .....	L. J. McCormick and W. R. Baker .....	108, 922
Harvester .....	A. and C. Sherwood .....	109, 062
Harvester .....	S. and I. Rawson .....	109, 755
Harvester .....	G. F. Hawley .....	110, 568
Harvester .....	G. T. Coolman and C. M. Young .....	99, 850
Harvester .....	W. R. Low and A. Adams .....	99, 451
Harvester .....	J. B. McCormick .....	99, 929
Harvester .....	J. McCaffery .....	100, 051
Harvester .....	R. Eickemeyer .....	101, 719
Harvester .....	C. H. Charlesworth and J. H. Short .....	103, 136
Harvester and binder, Grain .....	L. B. Stilson .....	99, 968
Harvester and binder, grain, Combined .....	J. H. Whitney .....	109, 985
Harvester and thrasher, Combined .....	D. Howell .....	99, 089
Harvester and thrasher, Combined .....	J. D. Field .....	101, 849
Harvester-attachment for raking and binding grain .....	H. A. Reid .....	104, 883
Harvester, Clutch-mechanism for .....	W. Michael .....	103, 910
Harvester, Combined rake and reel for .....	P. F. Hodges .....	103, 185
Harvester, Combined rake and reel for .....	P. F. Hodges .....	103, 186
Harvester, Corn .....	E. Tush .....	99, 034
Harvester, Corn .....	W. Murray .....	99, 463
Harvester, Corn .....	J. H. L. Tuck .....	99, 501
Harvester, Corn .....	H. Flesher .....	101, 721
Harvester, Corn .....	M. A. Getzendaner .....	102, 532
Harvester, Corn .....	J. E. Rice .....	103, 779
Harvester, Corn .....	G. B. Humlin .....	104, 846
Harvester, Corn .....	N. Newman .....	105, 716
Harvester, Corn .....	Meuzo A. Smith .....	107, 972
Harvester, corn, and husker, Combined .....	S. Patton .....	103, 362
Harvester, Cotton .....	J. Davis, jr., and D. Scott, jr. ....	101, 439
Harvester, Cotton .....	D. C. Hubbard .....	105, 211

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Harvester crank and pin.....	J. Kline.....	101, 134
Harvester-cutter.....	C. K. Myers.....	99, 695
Harvester-cutter.....	I. A. Hebbard.....	101, 460
Harvester-cutter.....	F. E. Rogers.....	104, 773
Harvester-cutter.....	D. Stukey.....	107, 118
Harvester cutter-bar.....	R. Allstatter.....	103, 699
Harvester, Cutter-bar for.....	W. J. Oxer.....	103, 361
Harvester-cutter, Corn.....	J. J. De Freitas.....	105, 784
Harvester cutter-holder for grinder.....	T. E. King and G. C. Dolph.....	107, 784
Harvester-cutters, Machine for sharpening.....	W. S. Ingraham.....	106, 167
Harvester, Cutting-apparatus for.....	T. J. and G. M. Clark.....	108, 686
Harvester, Draught-device for.....	J. M. Smith.....	109, 353
Harvester-dropper.....	W. G. Beels.....	98, 909
Harvester-dropper.....	C. D. Jefferies.....	99, 444
Harvester-dropper.....	E. Myers.....	100, 181
Harvester-dropper.....	N. S. Ketchum.....	101, 273
Harvester-dropper.....	A. Ward.....	102, 890
Harvester-dropper.....	J. O. Taber.....	103, 796
Harvester-dropper.....	D. S. Harner.....	104, 953
Harvester-dropper.....	W. N. Whiteley.....	105, 396
Harvester-dropper.....	T. C. Moore.....	107, 522
Harvester-dropper.....	T. W. S. Kidd.....	110, 246
Harvester-gearing for changing speed.....	M. G. Hubbard.....	99, 439
Harvester-guard fingers, Machine for manufacturing. (Division A.).....	J. Fassler.....	100, 878
Harvester-guard fingers, Machine for sawing the slot in.....	J. Fassler.....	105, 323
Harvester-knife.....	G. J. Wardwell.....	99, 797
Harvester-knife, Sharpening.....	A. P. Taylor.....	101, 061
Harvester, Reel for.....	J. W. Bope.....	103, 569
Harvester, Rest for.....	J. W. Bope.....	103, 570
Harvesters, Adjustable reel-post for.....	J. W. Davis.....	105, 654
Harvesters, Binding-attachment for.....	B. W. Squires and C. M. Clinton.....	99, 256
Harvesters, Binding-attachment for.....	F. B. Isett.....	105, 946
Harvesters, Binding-attachment for.....	D. W. Travis.....	107, 126
Harvesters, Combined reel and rake for.....	S. H. Bingham.....	99, 820
Harvesters, Cutter-bar for.....	E. G. Shortt and C. Oberly.....	101, 930
Harvesters, Cutting-apparatus for.....	H. Mewes.....	105, 111
Harvesters, Cutting-apparatus for.....	H. C. Aydelott.....	106, 305
Harvesters, Cutting-apparatus for.....	J. L. Abell.....	109, 569
Harvesters, Dropping-device for.....	O. C. Green.....	98, 689
Harvesters, Dropping-platform for.....	J. B. Sawyer.....	102, 439
Harvesters, Dropping-platform for.....	E. P. Cadz.....	102, 914
Harvesters, Dropping-platform for.....	M. T. Reynolds.....	103, 370
Harvester, Seed.....	F. Decker.....	105, 920
Harvesters, Gearing for.....	A. H. Wagner.....	100, 221
Harvesters, Grain-platform for.....	J. P. Adriance and T. S. Brown.....	99, 617
Harvesters, Guard-finger for.....	A. Crosby.....	105, 311
Harvesters, Means for adjusting the grain-wheel of.....	J. D. Wright.....	109, 481
Harvesters, Pitman-connection for.....	J. Dixon and M. B. Sampson.....	106, 339
Harvesters, Pitman-joint for.....	S. T. Lamb.....	100, 158
Harvesters, Pitman-joint for.....	S. T. Lamb.....	100, 159
Harvesters, Platform for.....	C. Lidren.....	102, 839
Harvesters, Rake-attachment for.....	C. Barns.....	106, 108
Harvesting-machines, Combined crank-wrist for.....	J. O. Taber.....	104, 050
Hasp and staple fastening.....	E. P. Jones.....	100, 899
Hasp-fastening for fruit-crates.....	F. R. Baird.....	99, 620
Hasp for trunk-locks.....	A. V. Ryder.....	99, 484
Hasp for trunks.....	S. T. Barton and J. W. Affron.....	101, 212
Hat.....	J. M. Heard.....	103, 457
Hat.....	J. W. McGill.....	109, 641
Hat.....	G. Johnson.....	110, 570
Hat and cap holder and bracket.....	J. R. Hartman and M. Kais.....	105, 938
Hat-blocking machine.....	J. Sareus and W. H. Behrens.....	102, 613
Hat-blocking machine.....	J. Sheldon.....	103, 787
Hat-bodies, Machine for felting.....	J. Kirk, S. Shelmerdine, and C. Froggatt.....	101, 270
Hat-bodies, Machine for felting and hardening.....	J. T. Earle.....	107, 887
Hat-bodies, Machine for forming.....	I. Nutt.....	108, 175
Hat-bodies, Machine for sizing and felting.....	G. A. Mandeville.....	108, 715
Hat, Brim of soft.....	J. W. Corey.....	108, 884
Hat-check.....	J. E. Smith.....	102, 982
Hatch, Vessels.....	J. P. Maddox.....	109, 330
Hatchway-hoist, Self-acting.....	G. N. Creamer.....	100, 265
Hat-finishing machine.....	G. W. Stout.....	109, 072
Hat-pouncing machine.....	J. B. Brown.....	108, 562
Hats and caps, Water-proof sweat-band for.....	P. F. Lenhart.....	104, 861
Hats, felt, Manufacture of.....	G. H. Scribner.....	101, 652
Hat-shaping machine.....	J. P. Marlot.....	99, 458
Hat-sizing machine.....	A. Pelisse and F. Degen.....	99, 700
Hats, Machine for blocking and stretching.....	J. De La Mar.....	108, 116
Hats, Machine for embossing.....	E. Eickemeyer.....	99, 544
Hats, Machine for felting.....	A. Cattaneo.....	104, 421

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Hats, Machine for stretching.....	A. Pelisse.....	98, 624
Hats, Ventilator for.....	S. Beatty.....	103, 703
Hatters, Head-measure for.....	H. Bonham.....	105, 895
Hat-trimming, Machine for covering reeds for.....	G. A. Shepard.....	102, 722
Hawse-hole cover.....	R. Liston.....	103, 630
Hawse-pipe stopper.....	O. B. Bearse.....	104, 101
Hay and manure fork.....	F. Villard.....	99, 982
Hay and pruning knife, Combined.....	J. Fasig.....	102, 524
Hay-binder.....	A. R. Clark.....	109, 176
Hay-carrier.....	C. S. Boothby.....	102, 651
Hay-carrier.....	T. J. Powell.....	105, 723
Hay crane or carrier.....	B. P. Brackman.....	99, 520
Hay-drag.....	D. and A. Eddelman.....	99, 766
Hay-fork.....	J. E. Lobdell and L. H. Smith.....	99, 449
Hay fork and hook.....	T. W. Peirce.....	107, 531
Hay-fork, Horse.....	L. Rogers.....	98, 887
Hay-fork, Horse.....	E. G. Crandall.....	98, 930
Hay-fork, Horse.....	C. Forney and J. Swab.....	98, 946
Hay-fork, Horse.....	F. W. Thorla.....	99, 033
Hay-fork, Horse.....	G. N. Stearns.....	99, 120
Hay-fork, Horse.....	S. Clark.....	99, 292
Hay-fork, Horse.....	G. F. Weymouth.....	100, 476
Hay-fork, Horse.....	R. S. Frame.....	100, 518
Hay-fork, Horse.....	J. M. McDonald.....	103, 650
Hay-fork, Horse.....	T. D. Ingersoll.....	100, 767
Hay-fork, Horse.....	C. T. Grimes.....	101, 122
Hay-fork, Horse.....	E. U. Smith.....	101, 524
Hay-fork, Horse.....	J. W. Hull.....	103, 192
Hay-fork, Horse.....	S. P. Mecay.....	103, 485
Hay-fork, Horse.....	W. E. Derrick.....	104, 124
Hay-fork, Horse.....	A. Shellenberger.....	104, 365
Hay-fork, Horse.....	J. S. Yinger.....	104, 529
Hay-fork, Horse.....	G. W. Shade.....	104, 891
Hay-fork, Horse.....	H. G. Porter.....	105, 722
Hay-fork, Horse.....	L. W. Stuart.....	106, 230
Hay-fork, Horse.....	S. Bebout.....	108, 094
Hay-fork, Horse.....	C. N. Baldwin.....	108, 551
Hay-fork, Horse.....	W. W. McFadden.....	109, 032
Hay-fork, Horse.....	A. T. Dunbar and J. H. Fellows.....	109, 305
Hay-gatherer.....	W. E. Phelps.....	99, 589
Hay-gatherer.....	C. Waste.....	104, 233
Hay-gatherer and carrier.....	G. Meaders.....	104, 480
Hay-gatherer and shocker.....	C. M. Terrill.....	101, 183
Hay-knife and pruning-hook, Combined.....	D. Fasig.....	100, 611
Hay-loader.....	C. B. Garlinghouse.....	99, 181
Hay-loader.....	A. E. Preston.....	99, 947
Hay-loader.....	G. G. Park.....	106, 611
Hay-loader.....	J. Bachelder.....	100, 710
Hay-loader.....	J. M. Boorman.....	101, 705
Hay-loader.....	E. Cooper.....	105, 308
Hay-loader.....	A. Buck.....	105, 418
Hay-loader.....	I. J. Parker.....	105, 837
Hay-loader.....	W. H. Gray.....	106, 355
Hay-loader.....	D. Clagett.....	106, 916
Hay-loader.....	H. L. Gockley.....	107, 038
Hay-loading device.....	A. B. Clark.....	103, 844
Hay, Machine for raking and cocking.....	Z. C. Steele.....	103, 099
Hay, Machine for raking and cocking.....	S. Stewart.....	103, 100
Hay-rack and wagon-box, Combined.....	F. G. McClellan.....	102, 023
Hay-rake and loader.....	N. Gabel.....	98, 581
Hay-rake and tedder, Combined.....	S. J. Taylor.....	103, 524
Hay-rake, Horse.....	C. W. Sanborn.....	98, 637
Hay-rake, Horse.....	N. W. Curtis.....	99, 066
Hay-rake, Horse.....	C. Howard.....	99, 319
Hay-rake, Horse.....	W. H. Long.....	99, 331
Hay-rake, Horse.....	J. Morgan and W. Cline, jr.....	99, 457
Hay-rake, Horse.....	J. H. Cook.....	99, 643
Hay-rake, Horse.....	B. F. Horton.....	99, 897
Hay-rake, Horse.....	J. K. O. Neil.....	99, 939
Hay-rake, Horse.....	A. B. Barnard.....	100, 104
Hay-rake, Horse.....	C. Tyler.....	101, 189
Hay-rake, Horse.....	G. H. Roister.....	100, 804
Hay-rake, Horse.....	G. Wieland.....	101, 196
Hay-rake, Horse.....	J. H. Morris.....	101, 646
Hay-rake, Horse.....	R. W. McClelland.....	101, 752
Hay-rake, Horse.....	J. I. Monroe.....	101, 904
Hay-rake, Horse.....	S. P. Smith.....	102, 172
Hay-rake, Horse.....	D. S. Emrick.....	102, 228
Hay-rake, Horse.....	G. Notman.....	102, 578
Hay-rake, Horse.....	J. A. McGee.....	103, 665
Hay-rake, Horse.....	J. S. Shrawder.....	103, 092

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Hay rake, Horse.....	D. H. Weaver.....	103, 631
Hay-rake, Horse.....	S. P. Smith.....	103, 789
Hay-rake, Horse.....	E. Zimmerman.....	103, 815
Hay-rake, Horse.....	W. H. Fay.....	104, 131
Hay-rake, Horse.....	S. S. Bortree.....	104, 545
Hay-rake, Horse.....	L. Myers.....	105, 117
Hay-rake, Horse.....	A. Brown.....	105, 165
Hay-rake, Horse.....	N. M. Barnes.....	105, 542
Hay-rake, Horse.....	A. J. Shunk.....	105, 733
Hay-rake, Horse.....	S. R. Nye.....	105, 833
Hay-rake, Horse.....	S. L. Denney.....	106, 336
Hay-rake, Horse.....	G. M. L. McMillen.....	106, 385
Hay-rake, Horse.....	J. M. Colson.....	106, 554
Hay-rake, Horse.....	J. Mills.....	106, 604
Hay-rake, Horse.....	G. O. Lackey.....	107, 133
Hay-rake, Horse.....	G. Hauck.....	107, 256
Hay-rake, Horse.....	M. J. Robinson.....	107, 411
Hay-rake, Horse.....	G. E. Carleton.....	107, 660
Hay-rake, Horse.....	J. C. Stoddard.....	107, 832
Hay-rake, Horse.....	J. E. Wisner.....	108, 744
Hay-rake, Horse.....	O. T. Nanny.....	109, 439
Hay-rake, Horse.....	H. N. Green.....	109, 509
Hay-rake, Horse.....	J. E. Wisner.....	109, 700
Hay-spreader.....	C. R. Frink.....	98, 486
Hay-spreader.....	W. H. H. Frye.....	103, 441
Hay-spreader.....	H. L. Perkins.....	103, 771
Hay-spreader.....	J. F. Thomas and D. H. McLane.....	105, 141
Hay-spreader.....	G. I. Wooster.....	106, 444
Hay-tedder.....	R. Bryson.....	99, 833
Hay-tedder.....	T. J. and G. M. Clark.....	100, 876
Hay-tedder.....	J. M. Burdick.....	101, 972
Hay-tedder.....	W. Smith.....	102, 173
Hay-tedder.....	H. Warren.....	104, 669
Hay-tedder.....	F. R. Smith.....	106, 0-7
Hay-tedder.....	M. B. Harvey.....	107, 365
Hay-tedder.....	O. A. Benton.....	109, 863
Hay-unloader.....	H. H. Ensminger.....	104, 947
Head-block.....	H. H. Grindley.....	106, 922
Head-block.....	P. M. Cummings.....	110, 119
Head-block for saw-mills.....	A. W. Thompson.....	98, 523
Head-block for saw-mills.....	G. Selden and O. C. Briggs.....	99, 456
Head-block for saw-mills.....	J. H. and G. Burket.....	99, 828
Head-block for saw-mills.....	J. Duvall and J. Winterbottom.....	103, 032
Head-block for saw-mills.....	C. E. Grandy.....	103, 871
Head-block for saw-mills.....	A. Shearon.....	103, 245
Head-block for saw-mills.....	G. Selden and H. O. Kelsey.....	104, 068
Head-block for saw-mills.....	J. W. Handshy.....	106, 578
Head-block for saw-mills.....	G. Selden.....	107, 728
Head-block for saw-mills.....	F. W. Shelley.....	107, 966
Head-block for saw-mills.....	F. J. Staley.....	110, 085
Head-block of saw-mill.....	J. A. Clark.....	102, 091
Head-block of saw-mills.....	C. Meiners.....	102, 847
Head-block of saw-mills.....	W. B. Trunick.....	106, 734
Head-block of saw-mills.....	W. Wellington.....	102, 966
Head-light, Locomotive.....	S. M. Davies.....	109, 877
Head-lights, Lens or glass for.....	H. C. Felthousen.....	110, 449
Head-rest.....	E. P. Cook.....	100, 014
Head-rest.....	C. V. Littlepage.....	103, 631
Head-rest.....	B. Lyon and C. M. Curtis.....	104, 473
Head-rest.....	M. Warne.....	108, 308
Head-rest.....	J. S. Bartlett.....	108, 926
Head-rest for car-seats.....	E. M. Judd.....	109, 823
Heads of bolts, Machine for turning.....	W. F. Swathel.....	107, 561
Heads of screw-blanks, Machine for shaving.....	J. F. Sharrett.....	108, 648
Hearth, grate, and fender, Combined.....	G. Buchanan.....	104, 703
Hearth, Metallic.....	O. Kells.....	99, 777
Heated apartments, Apparatus to effect the hydration of air in.....	P. J. Schopp.....	103, 665
Heater and filter, Feed-water.....	D. E. Shaw.....	103, 243
Heater and filter, Feed-water.....	E. R. Stilwell.....	104, 789
Heater and ventilator.....	G. W. Blake.....	100, 110
Heater, Base-burning fire-place.....	J. Martino.....	100, 539
Heater, Base-burning fire-place.....	J. Jaeger.....	109, 909
Heater, Cream.....	J. C. Reddick and J. S. Coon.....	101, 086
Heater, Feed-water.....	W. Phelan.....	102, 965
Heater, Feed-water.....	G. Waters.....	106, 972
Heater, Feed-water.....	H. Anderson.....	107, 850
Heater, Fire-place.....	J. M. Thatcher.....	104, 376
Heater, fire-place, Base-burning.....	B. C. Bibb and P. Klotz.....	99, 525
Heater, fire-place, Base-burning.....	A. Murdock.....	106, 191
Heater for burnishing irons, Steam.....	J. M. De Lacy.....	100, 017



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Heater for steam-boiler, Feed-water .....	D. Whitlock .....	105, 397
Heater for steam-boiler, Feed-water .....	D. Lordon .....	107, 185
Heater, Gas .....	D. G. Haskins .....	98, 767
Heater, Gas .....	J. Sheedy .....	101, 928
Heater, Gas .....	L. B. Hamilton .....	102, 258
Heater, Gas .....	J. Cromly .....	103, 017
Heater, Gas .....	G. F. Meiggs .....	103, 222
Heater, Gas .....	C. C. Burt .....	103, 297
Heater, Gas .....	A. Adams .....	104, 531
Heater, Gas .....	J. E. Cone .....	105, 305
Heater, Gas .....	J. Lundgren .....	106, 070
Heater, Gas .....	S. G. Dare .....	108, 888
Heater, Gravel .....	W. A. Gay .....	99, 077
Heater, Laundry-iron .....	R. Diven .....	103, 997
Heater, Railroad-car .....	F. Shallor .....	100, 333
Heater, Railroad-car .....	W. Meller .....	100, 543
Heater, Railroad-car .....	J. G. Allen .....	107, 149
Heater, Railroad-car .....	P. Grandjean .....	103, 702
Heater, Sad-iron .....	J. G. Redline .....	98, 629
Heater, Sad-iron .....	E. Lewis .....	99, 213
Heater, Sad iron .....	R. Drake .....	99, 542
Heater, Sad-iron .....	F. Stadler .....	99, 609
Heater, Sad-iron .....	G. O. Hinks .....	100, 525
Heater, Sad-iron .....	W. Scarlett .....	101, 519
Heater, Sad-iron .....	J. Burgess .....	103, 294
Heater, Sad-iron .....	E. Phillips .....	105, 245
Heater, Sad-iron .....	J. W. Thorp .....	109, 471
Heater, Steam .....	F. P. Halberg .....	101, 602
Heater, Steam .....	J. Shackleton .....	101, 609
Heater, Steam .....	S. D. Tillman .....	101, 510
Heater, Steam .....	G. W. Blake .....	104, 696
Heater, Steam .....	J. J. Roeper .....	104, 772
Heater, Steam .....	B. F. Campbell and C. Whittier .....	105, 640
Heater, Steam .....	W. C. Baker .....	105, 886
Heater, Steam .....	D. E. and F. C. Somes .....	108, 531
Heater, Steam .....	E. Bourne .....	110, 003
Heater, Steam-generating .....	C. A. Buttles .....	99, 153
Heater, Water .....	J. and T. A. Raisbeck .....	108, 050
Heating and cooking, Range for .....	J. S. Clark .....	107, 876
Heating and puddling furnaces, Slide-door for .....	S. McLaughlin .....	108, 501
Heating and ventilating apparatus .....	B. F. Sturtevant .....	100, 211
Heating and ventilating attachment for stoves and fire-places .....	E. S. and B. R. Potter .....	102, 590
Heating and ventilating buildings, Apparatus for .....	J. Stover .....	108, 202
Heating and ventilating, System of .....	G. F. Schulze .....	101, 168
Heating-apparatus, Feed-water .....	J. F. Morse .....	104, 187
Heating-apparatus, Steam .....	E. M. Bosley .....	102, 757
Heating-attachment for steam-boilers .....	E. Spencer .....	100, 947
Heating-drum .....	C. W. Servoss .....	102, 053
Heating-table for silvering glass .....	H. B. Walker .....	108, 413
Heddles, wire, Machine for making .....	P. and F. Philip .....	98, 706
Heddlng-machine .....	P. Philip .....	106, 277
Hedge and tree trimmer .....	C. E. Healey .....	100, 145
Hedge-trimmer .....	J. M. and O. W. Van Nosedall .....	99, 121
Hedge-trimmer .....	D. Oliver .....	99, 938
Hedge-trimmer .....	W. E. Horne .....	104, 956
Hedge-trimmer .....	J. McAnulty .....	107, 517
Hedge trimmer and mower, Combined .....	G. Waddington .....	100, 955
Hedge-trimmer and stalk-cutter, Combined .....	J. G. Sprague .....	99, 490
Heel-burnisher .....	M. Burnham, 2d .....	106, 657
Heel-calk .....	M. F. Walter and C. Standinger .....	107, 132
Heel-cutting machine, Knife-holder and guide for .....	S. Keen .....	108, 601
Heel-rounding machine .....	J. C. White .....	106, 901
Hemp, flax, and other fibrous substances, Apparatus for spinning .....	E. Bazin .....	108, 233
Hide-beaming machine .....	P. Lennox .....	109, 135
Hide-mill, Operating .....	J. G. Curtis .....	109, 393
Hides and skins, Apparatus for tanning .....	W. Y. Warner and J. Crooks .....	98, 651
Hides and skins, Compound for bating .....	L. F. Robertson .....	110, 161
Hides and skins, Compounds for bating .....	C. F. Pankinn .....	109, 656
Hides and skins, Depilating and tanning .....	J. Henry .....	104, 734
Hides, Apparatus for tanning .....	R. T. White .....	101, 331
Hides, Apparatus for working .....	H. Lampert .....	100, 907
Hides, Compound for stuffing and tanning .....	E. England .....	104, 719
Hides, Machinery for scouring and dressing .....	C. and F. E. Holmes .....	103, 463
High and low water indicator, Combined .....	L. F. Smith .....	109, 959
Hinge .....	D. Werner .....	98, 827
Hinge .....	T. Smith .....	99, 969
Hinge .....	G. F. Outten .....	101, 968
Hinge .....	D. W. Long .....	103, 758
Hinge .....	G. F. Fischer and A. Whelan .....	104, 294

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Hinge .....	G. S. Hurford .....	104, 316
Hinge .....	S. D. Van Pelt .....	105, 743
Hinge .....	W. Johnson .....	106, 169
Hinge .....	F. B. Jones .....	106, 170
Hinge .....	J. Plant .....	106, 278
Hinge .....	J. D. Brown .....	106, 315
Hinge .....	C. Gaylord .....	106, 351
Hinge .....	A. Huffer .....	108, 143
Hinge .....	R. Drahota .....	110, 120
Hinge and ring for lockets, Combined .....	G. Hartje .....	105, 201
Hinge, Blind .....	C. B. Clark .....	99, 844
Hinge, Blind .....	D. C. Sage .....	100, 453
Hinge, Blind-fastening .....	J. H. Nevins .....	106, 279
Hinge for blinds .....	D. C. Sage .....	101, 359
Hinge for blinds .....	A. Eccard .....	105, 441
Hinge for landau-carriage, Concealed .....	E. Wells .....	103, 948
Hinge for school-desks .....	A. E. Roberts .....	107, 724
Hinge for show-cases .....	J. McAdams .....	99, 453
Hinge for shutters .....	J. Hof and P. Brenneis .....	102, 125
Hinge for shutters .....	C. H. and W. Forbes .....	102, 242
Hinge-machine .....	J. H. Baird .....	101, 210
Hinge, Reversible .....	A. P. Seymour .....	100, 332
Hinge, Self-locking .....	G. E. Boisselier .....	107, 437
Hinge, Spring .....	D. Renshaw .....	98, 709
Hinge, Spring .....	J. Bidwell .....	104, 252
Hinge, Spring .....	W. Wells .....	109, 855
Hitch-hook .....	G. W. Chandler .....	106, 549
Hobby-horse .....	J. Liming .....	104, 170
Hobby-horse .....	C. Hitzelberger .....	107, 049
Hobby-horse and carriage-motor, Combined .....	J. Liming .....	105, 701
Hoe .....	G. T. Jobson .....	98, 598
Hoe .....	L. L. Bond .....	99, 821
Hoe .....	E. Warren .....	102, 891
Hoe .....	L. J. Aderhold .....	106, 405
Hoe .....	A. Ellis and O. Albertson .....	108, 465
Hoe .....	J. and A. Fairley .....	119, 126
Hoe, Garden .....	A. C. Judson .....	107, 060
Hoe, Horse .....	N. H. Lindley .....	98, 983
Hoe, Horse .....	H. W. Hasslock .....	101, 010
Hoe, Horse .....	I. Copeland .....	107, 456
Hoe, Horse .....	J. T. Whitlock .....	108, 741
Hoes, Cleansing-attachment for .....	R. R. and H. P. Spedden .....	105, 843
Hog-cholera, Medical compound for .....	T. L. Cotten .....	108, 453
Hogs, Device for catching and holding .....	F. Voss, J. P. Hax, and H. Krug .....	107, 312
Hoisting and lowering apparatus .....	H. E. Towle .....	101, 621
Hoisting-apparatus .....	W. H. Brown .....	102, 763
Hoisting-apparatus .....	H. A. Schneekloth .....	102, 597
Hoisting-apparatus .....	G. W. Brown .....	103, 292
Hoisting-apparatus .....	O. H. Flook .....	104, 567
Hoisting-apparatus .....	T. Pollard .....	106, 224
Hoisting-apparatus .....	M. K. Carpenter .....	106, 914
Hoisting-apparatus .....	L. Burnell .....	107, 868
Hoisting-apparatus .....	J. H. Violet .....	109, 278
Hoisting-apparatus .....	H. H. Hunt .....	110, 238
Hoisting-apparatus .....	W. D. Andrews .....	110, 331
Hoisting-apparatus, Coal .....	L. S. Chichester .....	100, 259
Hoisting-apparatus, Safety .....	C. W. Copeland .....	105, 177
Hoisting-apparatus, Safety-mechanism for .....	W. H. Merrick .....	100, 651
Hoisting-block .....	J. A. Burr .....	108, 446
Hoisting-gear .....	H. F. Shaw .....	102, 719
Hoisting-grapple .....	J. A. Burgess .....	107, 444
Hoisting-machine .....	M. Lynch .....	99, 578
Hoisting-machine .....	J. Jewsbury .....	100, 769
Hoisting-machine .....	G. Johnson .....	101, 367
Hoisting-machine .....	R. A. and W. Kendall .....	102, 274
Hoisting-machine .....	N. J. Wilkinson .....	102, 345
Hoisting-machine .....	W. C. Williamson .....	106, 642
Hoisting-machine .....	N. Parrish .....	107, 807
Hoisting-machine .....	N. Woularlarsky .....	109, 988
Hoist or elevator, Cellar .....	H. L. Bowers .....	100, 006
Hoist, Pneumatic .....	J. C. Kent and H. C. Rich .....	102, 275
Hold-back rings to hames, Mode of attaching .....	W. B. Hayden .....	105, 679
Holder for brooms and mops .....	H. L. Franklin and E. Clark .....	98, 756
Holder for diamonds .....	G. D. Dunham .....	101, 111
Holder for fruit-jars .....	W. P. Walter .....	102, 453
Holder for metallic cartridge-cases .....	S. C. Greene .....	101, 121
Holder for silk, &c. .....	B. A. Armstrong .....	109, 995
Holder for spinning-ring .....	G. W. Knight .....	108, 270
Holder, Sad-iron .....	E. H. G. Von Doehren & F. P. L. Reimers .....	105, 523
Holder, Seat .....	J. Jackson .....	103, 620
Hollow-felted articles, Manufacture of .....	C. W. and H. E. Palmer and C. Houghton .....	195, 536

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Hollow revolving cylinders, Manner of mounting	L. B. Pitcher	107, 534
Hood for planing-machine	B. D. Mott	106, 856
Hook	R. V. Laney	105, 582
Hook-attachment for seats	J. A. Dixon	109, 593
Hook, Back-band	H. Beagle	109, 572
Hook, Bench	H. J. Skinner	104, 069
Hook, Cant	W. Q. Greely	98, 584
Hook, Cant	W. Tetro	110, 309
Hook, Clothes	J. Garvey and M. H. Kimball	103, 776
Hook, Coat and hat	M. and H. L. Judd	102, 945
Hook, Cultivating	J. F. Leitch	104, 042
Hook, Detaching	J. Bozorth	104, 547
Hook, Detaching	J. A. Lord, jr.	103, 323
Hook for canal-boats, Towing	J. and A. H. Doty	103, 310
Hook for corsets, Skirt-supporting	D. H. Fanning	109, 309
Hook for harness	A. White	100, 226
Hook for harness	G. and A. Bernd	100, 233
Hook, Harness	J. Seaman	99, 957
Hook, Harness	M. Reilly	104, 646
Hook, Harness	W. H. Taylor	108, 739
Hook, Harness-saddle	R. Hart	99, 185
Hook, Manure	S. B. Minnick	100, 311
Hook, Meat	S. Weaver	107, 839
Hook, Pruning	W. M. Doty	98, 575
Hook, Pruning	A. Downer	102, 513
Hook, Pruning	D. B. Seeley	105, 601
Hook, Rein	G. Blake	103, 008
Hook, Shoe-lacing	A. Patten	109, 933
Hook, Snap	G. A. Brown	104, 702
Hook, Snap	J. A. Fletcher	106, 043
Hook, Snap	D. J. Blasir	107, 859
Hook, Snap	A. A. Hotchkiss	108, 024
Hook, Snap and buckle	J. C. and J. H. Brady	100, 364
Hook, Steam and gas-pipe	C. B. Long	104, 326
Hook, Tackle	H. Thompson	103, 687
Hook, Tassel	H. L. Judd	104, 164
Hook, Tassel	E. Turner	104, 503
Hook, Trace	W. H. Morgan	107, 085
Hook, Wardrobe	J. B. Sargent	100, 194
Hook, Whiffletree	J. Knight	107, 785
Hoop-racking machine	R. M. Shaner	110, 295
Hoops, flanged and beaded, Machine for making	J. Blood	107, 216
Hoop shaving machine	S. Parker	107, 622
Hoop, Skipping	E. Whitehead	104, 674
Hoops, Machine for cutting	W. H. Davis	106, 671
Hoops, Machine for cutting locks in	T. Conklin	101, 436
Hoops, Maching for cutting the ends of	L. N. Hewes	110, 462
Hoops, Machine for dressing	J. Penney	108, 820
Hoops, Machine for manufacturing	J. B. Dougherty	106, 260
Hopper for mills and grain-drills	R. P. Johnson	105, 807
Hop-picker	M. Moses	101, 494
Hops, Manufacture of extract of	C. A. Seely	103, 091
Hops, Method of preserving the aromatic principle of	H. Bartholomay	100, 352
Horizon for sextants, Artificial	J. A. Rogers	101, 919
Horn, Composition resembling	W. M. Welling	98, 727
Horse and cattle liniment	H. H. Hammer	109, 203
Horse and cattle poke	W. Miller	104, 185
Horse and mule shoe	J. Wonderlin	109, 791
Horse and self-propeller, Children's	J. H. Nolan	100, 316
Horse-cars, Draught-bar for	J. Trent	99, 730
Horse-collar block	E. L. Brazenor	101, 819
Horse-collar fastening	E. L. Welbourn	108, 418
Horse-collar fastenings	A. Bratnober	108, 559
Horse-collar top	I. Hicks	107, 905
Horse-cover, Ventilated	C. P. Eager	102, 381
Horse-detaching apparatus	J. C. Hancock and E. P. Richardson	105, 198
Horse-detaching device	A. Schmitt	107, 727
Horse hay-rake and tedder, Combined	H. C. Varnum	105, 611
Horse-poke	M. J. Van Aken	100, 088
Horse-poke	G. Whitbeck	100, 827
Horse-power	C. H. Gifford	99, 555
Horse-power	J. M. Rand	99, 591
Horse-power and baling-press, Combined	C. A. Wright	107, 900
Horse-power apparatus	A. Gaar	106, 979
Horse-power apparatus	E. O. and C. B. Thompson	107, 309
Horse-power link, Endless-chain	G. L. Sheldon	105, 263
Horse-power, Mounted	M. B. Erskine	107, 237
Horse-powers, Apparatus for staking	B. F. Osgood	105, 238
Horse-powers, Mode of securing, to the ground	F. R. Randall	101, 507
Horse, Rocking	B. P. Crandall	98, 929
Horses and cattle, Condition powder for	J. E. Woolrich	104, 094

*Alphabetical list of inventions—Continued*

Invention or discovery.	Name of patentee.	No.
Horses, &c., Instrument for clipping or shearing.....	H. Knight.....	103, 489
Horses, Breast-collar for .....	W. E. Leonard .....	110, 377
Horses, Breeching-attachment for.....	W. F. Schatz .....	106, 732
Horses, Device for controlling .....	N. P. Slade .....	98, 715
Horses, Device for hitching.....	W. H. Bell .....	103, 283
Horses, Draught-attachment for .....	C. C. Colo .....	98, 563
Horses, Fly-net for.....	J. S. Huston.....	103, 337
Horses for collars, Machine for measuring .....	W. H. Flynn .....	99, 610
Horses from vehicles, Attaching and detaching.....	G. Switzer .....	106, 293
Horses, Halter for .....	A. Le Plougeon .....	109, 431
Horseshoe .....	A. L. Murphy .....	100, 180
Horseshoe .....	D. Roberge .....	100, 323
Horseshoe .....	D. Roberge .....	100, 329
Horseshoe .....	H. Ingraham.....	110, 763
Horseshoe .....	E. Cate .....	101, 581
Horseshoe .....	J. Henderson .....	102, 121
Horseshoe .....	G. Copeland .....	102, 504
Horseshoe .....	S. J. Baker .....	104, 097
Horseshoe .....	J. K. Christopher .....	103, 684
Horseshoe and boot, Combined.....	H. G. and E. M. Haedrick .....	105, 566
Horseshoe-bar .....	E. Cato .....	109, 586
Horseshoe-blank .....	J. Day .....	102, 095
Horseshoe-blank, Bar for.....	E. Cate .....	102, 775
Horseshoe-blanks, Roll for forming .....	C. L. Fitzhugh .....	110, 349
Horseshoeing-tool .....	R. Stout .....	101, 533
Horseshoe-nails, Machine for making.....	P. N. Gallaher and I. C. Tate .....	115, 189
Horseshoe-nails, Machine for shaping the heads of.....	N. Dexter .....	107, 679
Horseshoe-nails, Machine for stamping, pressing, and pointing.....	F. Sandham .....	109, 844
Horseshoes .....	J. S. Robertson .....	109, 055
Horseshoes, Forging nails for .....	S. S. Putnam.....	98, 707
Horseshoes, Machine for making.....	J. T. Walker .....	100, 222
Horseshoes, Machine for making.....	E. Wassell .....	100, 570
Horseshoes, Machine for making.....	C. W. Wettengel .....	100, 574
Horseshoes, Machine for making.....	L. D. Roberts .....	101, 513
Horseshoes, Machine for making.....	J. G. Stowe .....	103, 681
Horseshoes, Machine for making.....	A. and J. Reese .....	105, 490
Horseshoes, Machine for making.....	J. H. Snyder .....	108, 530
Horseshoes, Removable calk for.....	J. D. Barnum .....	103, 827
Horseshoes, Toe-calk for.....	G. Custer .....	101, 831
Horses, Interfering-pad for .....	W. Somerville .....	104, 369
Horses, Interfering-pad for.....	J. Smith .....	105, 990
Horses, Tail-holder for.....	F. A. Roberts .....	101, 043
Horses to vehicles, Device for connecting .....	A. Shaler .....	99, 357
Horses to vehicles, Mode of attaching .....	J. K. Andrews .....	99, 278
Hose .....	B. F. Lee .....	98, 603
Hose-bridge .....	W. E. Cameron .....	107, 870
Hose, India-rubber and combination .....	W. A. Torrey .....	110, 172
Hose, pipes, and tubes, Closing leaks in.....	R. Street .....	98, 893
Hose, Rubber .....	G. C. Smith .....	99, 018
Hose, rubber, Covering the ends of.....	J. P. Rider and J. R. Bird.....	100, 443
Hose, Suction.....	A. F. Allen .....	100, 244
Hose, Vulcanized rubber.....	H. A. Alden .....	100, 096
Hot-blast apparatus.....	C. T. Provost .....	103, 923
Hotels, Communicating apparatus for.....	N. A. Patterson .....	98, 794
Hot-house parlor.....	P. Griffith .....	100, 287
Housing for metal rolling-mills .....	W. H. Ward .....	103, 399
House-trimmings .....	J. R. Webber .....	99, 798
Hub-boring machine.....	A. R. Silver .....	105, 265
Hub, Carriage .....	J. P. Chandler .....	99, 405
Hub, Carriage .....	J. O'Connor .....	102, 580
Hub, Carriage-wheel.....	S. Atha .....	99, 809
Hub, Carriage-wheel.....	J. Dump .....	100, 873
Hub, Carriage-wheel.....	B. Burr .....	100, 973
Hub, Carriage-wheel.....	W. J. Arrington .....	101, 203
Hub, Carriage-wheel.....	A. F. Cooper.....	102, 657
Hub, Carriage-wheel.....	S. Atha .....	109, 707
Hub for carriage.....	J. A. Maynard .....	108, 612
Hub for carriage-wheels .....	W. C. Pearsall .....	99, 942
Hub for carriage-wheels .....	J. M. Emmerich.....	106, 678
Hub-reamer .....	J. G. Robinson .....	101, 164
Hubs for carriages.....	N. Bryan .....	108, 411
Hubs, Machine for boring.....	A. Troup .....	102, 625
Hubs of road-carriages.....	J. Radlin .....	102, 709
Hubs to axles, Securing.....	G. E. Clow .....	107, 452
Hub, Wagon .....	J. D. Ham .....	105, 674
Hub, Wagon .....	J. B. Hubbell .....	107, 497
Hub, Wheel .....	C. P. Whitman .....	102, 998
Hub, Wheel .....	W. F. Ehlers .....	105, 926
Hub, Wheel .....	J. B. Hards .....	106, 361
Huller, Cotton-seed .....	W. P. Calahan and D. R. De Rush.....	98, 921
Huller, Cotton-seed .....	W. R. Fee .....	103, 596

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Hulling and scouring grain, rice, coffee, &c., Machine for.	L. H. Whitney .....	107, 644
Hulling-machine .....	D. Kahnweiler .....	101, 271
Hulling-machine .....	G. A. Buchholz .....	102, 764
Hulling-machine .....	W. Porter .....	103, 152
Hulling-machine .....	J. E. Carver .....	105, 643
Hulling-machine, Buckwheat .....	T. Nelson .....	109, 790
Hull of vessels .....	L. P. Rider .....	107, 961
Husk-hackling machine, Separating attachment for .....	G. B. Stacy .....	108, 532
Husking-machine, Corn .....	M. C. Jeffers .....	108, 484
Hydrant .....	J. Walsh .....	99, 037
Hydrant .....	J. R. Manny .....	99, 097
Hydrant .....	T. C. Bride .....	99, 396
Hydrant .....	S. G. Cabell and A. Q. Ross .....	100, 255
Hydrant .....	A. S. Fort .....	100, 389
Hydrant .....	J. P. Hyde .....	102, 126
Hydrant .....	J. Myers .....	102, 698
Hydrant .....	J. Fricker and J. Warden .....	104, 012
Hydrant .....	A. J. and T. McKenna .....	105, 106
Hydrant .....	W. Bailey .....	107, 434
Hydrant .....	A. Richmond, jr .....	109, 547
Hydrant .....	E. Clampitt .....	109, 587
Hydrant and fire-plug, Combined .....	F. Bauschliker .....	108, 751
Hydrants and fire-plugs, Thawing-device for .....	J. C. Moore .....	105, 830
Hydrants, Stop-plate for .....	J. C. Eastman .....	105, 925
Hydrants, Valve-cock for .....	S. Pfleger .....	103, 773
Hydraulic apparatus .....	N. Nolan .....	100, 042
Hydrocarbon, Apparatus for distilling .....	H. A. Stearns .....	103, 385
Hydrocarbon, Burning .....	I. Kendrick .....	109, 131
Hydrocarbon liquids, Feeding to a hot gas-retort .....	T. G. Springer .....	109, 264
Hydrocarbon liquids, Rendering leather impervious to .....	A. Warth .....	108, 072
Hydrocarbon oils, Apparatus for distilling .....	S. A. Hill and C. F. Thumm .....	102, 819
Hydrocarbon oils, Manufacture of .....	W. Spears .....	107, 734
Hydrocarbons, Apparatus for the manufacture of gas from .....	J. H. Smith .....	103, 848
Hydrocarbons, Generating gas from .....	J. R. Smedbury .....	109, 460
Hydrocarbons, heavy, Production of light from .....	R. S. Merrill .....	100, 915
Hydrocarbons, Producing light by the combination of .....	J. Phillips .....	98, 883
Hydrogen and air, Apparatus for mixing .....	D. Ashworth .....	102, 203
Hydrogen and hydrocarbon gas, Generating .....	J. S. Wood .....	101, 558
Hydrogen gas, Apparatus for generating and carburating .....	J. S. Wood .....	101, 557
Hydrogen gas, Machine for generating and carburating .....	H. J. Hoyt .....	103, 465
I.		
Ice, Apparatus for the manufacture of .....	D. L. Holden .....	101, 876
Ice, Apparatus for the manufacture of .....	S. Bennet .....	108, 868
Ice ax and pick .....	J. N. Bunnell .....	109, 867
Ice-chamber for refrigerator .....	J. W. Hazlett .....	100, 527
Ice, Cooling and producing .....	C. E. Haynes .....	104, 588
Ice-cream freezer .....	T. and G. M. Mills .....	100, 918
Ice-cream freezer .....	B. H. Hilliar .....	103, 182
Ice-cream freezer .....	B. G. Martin .....	103, 305
Ice-cream refrigerator .....	C. Vignal .....	105, 521
Ice-creper .....	W. B. Coates .....	98, 668
Ice-cutting machine .....	V. H. Halleck .....	101, 613
Ice-cutting machine .....	A. Deutschel .....	105, 183
Ice-house .....	W. Velte and J. Fagan .....	101, 405
Ice-machine .....	F. Windhausen .....	101, 198
Ice-machine .....	D. K. Tuttle and O. Lugo .....	101, 682
Ice-machine .....	C. Plagge .....	106, 722
Ice, Machine for cooling air and for the manufacture of .....	J. Kraft .....	110, 573
Ice, Machinery for the manufacture of .....	W. T. Duval .....	105, 924
Ice, Manufacture of .....	J. F. Gesner .....	107, 898
Ice, Manufacture of .....	M. Rosenstein .....	107, 962
Ice, Manufacture of .....	S. L. Newsham, W. H. Haines, and W. S. Henson .....	108, 816
Ice, Manufacture of .....	P. H. Vander Weyde .....	108, 851
Ice, Manufacture of, and cooling air, liquids, &c. .....	C. Tellier .....	100, 689
Ice-pick .....	E. Brown .....	101, 424
Ice-preserver .....	J. E. Pilkington .....	107, 405
Illuminating gas, Compound for the manufacture of .....	G. McKenzie .....	100, 433
Illuminating gases, Purifying .....	W. H. St. John and P. Cartwright .....	109, 268
Illuminating gas from coal and other materials, Manufacture of .....	G. McKenzie .....	100, 432
Illuminating gas, Manufacture of .....	A. C. Rand .....	100, 668
Illuminating purposes, Hydrocarbon vapor-machine for .....	B. B. Douglas .....	104, 126
Image, Sectional .....	B. Day .....	110, 213
Imitation hair-cloth, Manufacture of .....	J. J. Comstock and J. Aborn .....	103, 018



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Impermeator for steam-engines .....	H. Wilson .....	104, 914
Implement .....	W. A. Sharp .....	101, 773
Implement .....	J. W. Calef .....	110, 199
Implement, Combined agricultural .....	L. Lehmann .....	109, 226
Implement for cutting thread .....	F. Egge and R. W. Churchill .....	107, 016
Implement for measuring board .....	M. Tuells .....	102, 885
Implement for removing corns, bunions, &c. ....	C. L. Roorbach .....	110, 162
Implement for turning the edge of a shoemaker's buffing-knife .....	B. B. Webster .....	102, 994
Implement for under-cutting sand-cores in flasks .....	W. L. McDowell .....	100, 172
Implement, Transplanting .....	A. Davis .....	119, 211
Impregnating fibrous material for packing, &c. ....	E. D. Murfey .....	108, 224
Incrustation in steam-boilers, Compound for prevent- ing and removing .....	W. H. Burridge .....	103, 974
Incrustation in steam-boilers, Composition for pre- venting .....	J. G. Rodgers .....	103, 661
Incrustation in steam-boilers, Preventing .....	J. G. Rodgers .....	103, 662
Incrustation of steam-boilers, Preventing .....	J. T. Fisher .....	101, 248
Incubators .....	J. and H. Graves .....	110, 454
Index, Alphabetical .....	W. C. Huston .....	102, 404
India-rubber and gutta-percha goods, Manufacture of ..	J. Murphy .....	99, 935
India-rubber belt, Manufacture of .....	A. H. Hook .....	102, 268
India-rubber carpeting and embossed matting .....	J. H. Cheever .....	101, 823
India-rubber, Coating metal articles with .....	C. Hingher .....	106, 585
India-rubber, Covering metal articles with .....	C. Hingher .....	106, 819
India-rubber work, Machine for joining irregular seams in .....	C. A. Ensign .....	109, 726
Indicator, Combined high and low water .....	L. F. Smith .....	109, 959
Indicator for boilers, Low-water .....	C. S. Watson .....	103, 690
Indicator for burglar-alarm and for other purposes, Electro-magnetic .....	J. P. Snyder .....	103, 383
Indicator for city street-cars .....	W. Brown .....	107, 440
Indicator, High and low water .....	W. Butterfield .....	104, 265
Indicator, Laundry .....	R. Clarke .....	100, 601
Indicator, Low-water .....	P. W. Reinshagen .....	102, 433
Indicator, Low-water .....	D. Wiehl .....	105, 155
Indicator, Low-water .....	R. R. Carpenter .....	105, 422
Indicator, Low-water .....	G. M. Hopkins and J. A. Straight .....	106, 820
Indicator, Low-water .....	A. F. W. Neynaber .....	108, 618
Indicator, Low-water .....	F. Raynsford .....	108, 828
Indicator, Low-water, and feed-water regulator .....	R. Berryman .....	99, 234
Indicator, Low-water and high-pressure .....	G. M. Hopkins and J. A. Straight .....	106, 821
Indicator, Low-water and high-steam .....	L. F. Smith .....	107, 114
Indicator, Railroad-station .....	E. Conley .....	101, 437
Indicator, Station .....	E. Jamieson .....	105, 214
Indicator, Street and station .....	G. A. Jenks and J. J. Fawcett .....	108, 791
Indicators, steam-engine, Reducing gear for .....	H. L. Brevoort .....	100, 592
Indicator, Time, for letter-boxes .....	J. T. Young .....	101, 697
Indicator, Water .....	R. Berryman .....	99, 996
Induction-apparatus, Pocket .....	C. W. Meyer .....	102, 295
Ingot for corrugated metal beams, Form of .....	R. Montgomery .....	106, 713
Injector .....	C. F. Root .....	110, 289
Injector for steam-boilers .....	J. P. F. Datchy .....	105, 181
Injector for steam-boilers, Rotary .....	H. C. Crowell .....	103, 304
Injector, Metal .....	J. W. Hollingsworth .....	103, 188
Ink .....	C. F. Panknin .....	106, 198
Ink for printing and other purposes .....	L. Francis .....	102, 243
Ink for printing, Copying .....	C. Melvaine .....	108, 615
Ink for writing .....	B. F. Loftus .....	109, 327
Inking-apparatus .....	H. Barth .....	101, 703
Inking-apparatus for color-printing .....	I. L. G. Rice .....	102, 157
Inking-apparatus for color-printing .....	I. L. G. Rice .....	108, 630
Inking-apparatus for printing-presses .....	I. L. G. Rice .....	104, 203
Inking-apparatus for printing-presses .....	F. O. Degener .....	110, 018
Ink, Indelible .....	J. M. and J. W. Caldwell .....	102, 915
Ink or writing-fluid .....	C. Hebel .....	106, 582
Ink, Printers' .....	M. Turly and B. F. Thomas .....	105, 011
Ink, printers', Compound for .....	H. Loewenberg .....	104, 862
Ink, Printing .....	G. W. Casilear .....	104, 574
Ink, Printing .....	J. Kircher .....	110, 048
Ink-retaining attachment for pens .....	A. G. Brown .....	99, 147
Inkstand .....	F. T. Grimes .....	104, 360
Inkstand .....	C. H. Wright .....	104, 953
Insect-destroyer .....	T. Byrne and D. Strunk .....	109, 869
Insect-powder ejector .....	S. Rose and N. Goldsmith .....	109, 762
Insects, Device for destroying .....	W. H. Lewis .....	99, 214
Instrument, Acupuncture .....	G. Herrick .....	102, 232
Instrument for coupling railway-cars .....	A. McOmber and M. Ward .....	100, 542
Instrument for describing spirals, &c. ....	G. Crandell .....	99, 853
Instrument for dividing circles .....	M. Bowker and J. L. Stratton .....	99, 824
Instrument for dosing animals .....	O. Barker .....	100, 967

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Instrument for draughting garments .....	U. L. Leete .....	107, 068
Instrument for drawing geometrical lines .....	W. Ritchie .....	100, 072
Instrument for giving fluid-medicine to animals .....	H. A. Brandes .....	104, 416
Instrument for removing twine and wire from bottles .....	J. T. Haviland .....	104, 453
Instrument for testing oils .....	P. H. Vander Weyde .....	104, 798
Instrument, Leveling and grading .....	H. E. Towle .....	102, 882
Insulator, Battery .....	O. W. Robertson .....	105, 252
Insulator for telegraphic wire .....	R. R. Baker .....	103, 122
Insulator for telegraph-wires .....	A. G. Smith and W. Pettingell .....	109, 461
Insulator for telegraph-wires .....	M. De Montufar .....	109, 879
Insulator, Mode of forming .....	J. M. Brookfield .....	103, 555
Insulators for telegraph-poles, Manufacture of .....	H. Brooke .....	99, 145
Insulator, Telegraph .....	W. W. Baldwin .....	105, 625
Insulator, Telegraph .....	S. Oakman .....	105, 834
Insulator, Telegraph .....	S. McKee .....	107, 075
Invalids, Drinking-tube for .....	E. Chapin .....	103, 299
Invalids, Drinking-tube for .....	E. Chapin .....	103, 300
Iron against corrosion, Protecting .....	C. Godfrey and R. Lighthall .....	109, 508
Iron and other ores, Furnace and process for treating .....	J. Y. Smith .....	109, 355
Iron and steel, Electro-plating with silver .....	A. Lawe .....	109, 633
Iron and steel bar, Combined .....	E. Wheeler .....	104, 237
Iron and steel, Crucible for melting .....	J. E. Attwood .....	108, 084
Iron and steel, Manufacture of .....	J. Henderson .....	191, 263
Iron and steel, Manufacture of .....	J. Palmer .....	102, 912
Iron and steel, Manufacture of .....	G. F. Ansell .....	104, 686
Iron and steel, Manufacture of .....	G. H. Smith .....	105, 267
Iron and steel, Manufacture of .....	J. Henderson .....	106, 365
Iron and steel, Manufacture of .....	L. Sibert .....	108, 058
Iron and steel, Manufacture of .....	C. M. Nes .....	109, 752
Iron and steel, Metallurgic furnace for .....	J. Y. Smith .....	104, 219
Iron and steel, Process and apparatus for the manufacture of .....	H. Bessemer .....	10, 003
Iron and steel, Refining .....	J. E. Attwood .....	107, 322
Iron and steel, Welding-powder for .....	S. Bothwell .....	103, 418
Iron, cast, Surfacing .....	H. Tucker .....	103, 527
Iron, Coating and bronzing .....	L. Dockstader .....	102, 378
Iron-core for castings .....	A. C. Mott .....	98, 516
Iron from the slag of blast-furnace, Extracting .....	E. J. Bird .....	108, 235
Iron, Furnace for boiling and puddling .....	J. Westerman .....	103, 401
Ironing-board .....	J. Fischer .....	107, 469
Ironing-board .....	J. H. Beidler .....	109, 712
Ironing-machine .....	G. Boxley .....	101, 573
Ironing-machine .....	W. Jones .....	104, 740
Ironing-machine .....	A. C. Sawyer .....	104, 776
Ironing-machine .....	C. F. Parker .....	107, 714
Ironing-table .....	J. H. Mallory .....	109, 918
Ironing-table bureaus .....	M. White .....	110, 410
Iron, Machine for planing .....	A. B. Couch .....	99, 409
Iron, malleable, Manufacture of .....	J. G. Collins .....	102, 501
Iron, Manufacture and purifying of .....	J. Webster .....	103, 109
Iron, Manufacture of .....	D. Stewart .....	99, 367
Iron, Manufacture of .....	D. Stewart .....	99, 368
Iron, Manufacture of .....	W. Fields .....	102, 797
Iron, Manufacture of .....	J. D. W. Williams .....	104, 091
Iron, Manufacture of, and granulating the same .....	W. H. Perry .....	99, 588
Iron, Manufacture and apparatus therefor .....	J. D. Whelpley and J. J. Storer .....	101, 067
Iron, Manufacture of, by the Ellerhausen process .....	H. Davis .....	104, 939
Iron, Manufacture of wrought and puddled .....	W. Ennis .....	105, 347
Iron ore, Furnace for deoxidizing .....	A. W. Honsinger .....	98, 496
Iron ore, Furnace for deoxidizing .....	A. H. Brainerd .....	109, 173
Iron ores, Deoxidizing and carbonizing .....	C. Adams .....	100, 095
Iron pipe, Machine for bending, for welding .....	E. G. Woodworth, J. Brawdy, and F. Merithew .....	109, 094
Iron, Sad and crimping .....	C. Hyatt .....	106, 161
Iron, sheet, Manufacture of .....	I. E. Craig .....	103, 577
Iron, Smelting and refining .....	W. W. Habbell .....	99, 677
Iron, Smoothing .....	G. W. C. Lovell .....	100, 423
Iron, steel, &c., Tool and wheel for cutting and polishing .....	A. K. Eaton .....	103, 312
Iron tender-frame .....	B. W. Healey .....	103, 878
Iron, wrought, Manufacture of .....	C. Sacré, S. Perkins, and W. Smellie .....	108, 521
Iron, wrought, Manufacture of, from ore-cinder or slag .....	J. D. Whelpley and J. J. Storer .....	102, 740
Irrigating-machine .....	W. W. Hull .....	107, 375
Isinglass, Apparatus for cooling the rollers used in the manufacture of .....	E. Rowe .....	106, 212
J.		
Jack and spur, Boot .....	T. Gunn .....	105, 671
Jack, Boot .....	C. Brown .....	99, 517
Jack, Carriage .....	T. W. Johnston .....	99, 090
Jack, Carriage .....	A. R. Giles .....	106, 050
Jack, Carriage .....	D. Marshall .....	105, 379
Jack, Coupling .....	H. A. Brown and E. B. Keith .....	107, 656

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Jacket for heating-pipes	M. Ber.	106, 652
Jack for carriage-springs	R. R. Miller	100, 176
Jack for connecting poles to shafts and wagons	M. Schou	103, 508
Jack for moving the cross-heads of locomotives	J. S. Funk	100, 390
Jack, Hoisting	E. A. Castellaw	103, 563
Jack, Hoisting	F. Hollenberry	106, 485
Jack, Lifting	C. W. Mosher	98, 992
Jack, Lifting	B. and C. Schopf	99, 244
Jack, Lifting	A. Shaver	99, 717
Jack, Lifting	F. C. White	100, 828
Jack, Lifting	L. J. Blades	100, 846
Jack, Lifting	L. W. Fifield	101, 450
Jack, Lifting	L. P. Garcin	101, 454
Jack, Lifting	J. Rosecrans	101, 020
Jack, Lifting	W. Clark	102, 493
Jack, Lifting	G. W. Windsor	105, 434
Jack, Lifting	A. M. Waters	106, 639
Jack, Lifting	L. D. Warren	108, 414
Jack, Lifting	S. C. Leonard	109, 635
Jack, Pegging	C. Varney	102, 888
Jack, Pegging	H. Ricard	104, 999
Jack, Pegging	D. Mead and E. W. Watson	105, 353
Jack, Saw	A. Whitlock	106, 438
Jack-spool	B. James	103, 193
Jack, Wagon	P. B. Russell	99, 483
Jack, Wagon	J. W. Walton	107, 133
Jam-nut, Substitute for	T. B. Young	102, 644
Jar, Fruit	W. L. Haller	98, 586
Jar, Fruit	A. E. Fife	99, 550
Jar, Fruit	W. Galloway	99, 662
Jar, Fruit	W. H. Daniels	99, 763
Jar, Fruit	J. Haines	100, 396
Jar, Fruit	I. Buckman	100, 496
Jar, Fruit	T. C. Purdy	101, 505
Jar, Fruit	W. S. Thompson	101, 944
Jar, Fruit	R. McCully	102, 024
Jar, Fruit	J. L. Mason	102, 913
Jar, Fruit	J. L. Mason	103, 306
Jar, Fruit	T. P. Gibbons	104, 574
Jar, Fruit	B. B. Wilcox	104, 676
Jar, Fruit	T. Earle	104, 839
Jar, Fruit	T. A. Clark and H. C. Mascroft	107, 449
Jar, Fruit	E. Croft	107, 598
Jar, Fruit	C. G. and W. L. Imlay	109, 625
Jars, fruit, Fastening for	W. Galloway	101, 606
Jars, fruit, Fastening for	T. F. Woodward	101, 958
Jars, fruit, Fastening for	T. F. Woodward	109, 703
Jars, fruit, Safety-case for	J. Carter	110, 340
Jars, glass, Tool for forming screw-threads on	W. M. Kirchner	109, 825
Jars, glass, Process of forming smooth tops on	F. Rohrbacher and F. Hormann	106, 624
Jars, glass, Tool for forming the mouths of	G. M. Keefer	110, 243
Jelly-glass	J. S. and T. R. Atterbury	103, 702
Jelly-glass	W. M. Kirchner	109, 824
Jewelry-pin	I. Farjeon and W. H. Horton	108, 578
Joint for cement-pipes	D. G. Phipps	104, 348
Joint for fishing-rods	W. J. Hubbard	103, 895
Joint for metal pipes	W. H. Harrison	98, 960
Joint for pipes, Expansion	J. E. Jones	102, 010
Joint for pitman-heads, sickles of harvesters, &c	I. Poffenberger	102, 151
Joint for shafting, Universal	C. Roberts	98, 885
Joint for tongs, &c	W. E. Clarke	105, 908
Jointing staves, Machine for	J. W. Alesworth	103, 119
Joint mold or flask	W. Cullis	98, 567
Joint, Pipe	P. Clark	106, 122
Joint, Railway-rail	N. Hill	109, 210
Joist, Universal	A. Swibel	99, 742
Joist-protector	H. Galmann and C. R. Uhe	99, 305
Journal, Anti-friction	P. W. Yarrell	101, 401
Journal, Anti-friction	P. W. Yarrell	110, 323
Journal-bearing	I. P. Wendell	98, 825
Journal-bearing	D. A. Hopkins	109, 319
Journal-bearing, Anti-friction	R. G. Hatfield	99, 566
Journal-bearing for calendar-rolls	W. McAdams	104, 478
Journal-bearings, Lubricating	I. P. Wendell	104, 805
Journal-box	J. Melhvain	98, 987
Journal-box	S. C. Ellis	99, 422
Journal-box	J. T. Robinett	99, 711
Journal-box	J. Hughes	106, 486
Journal-box	E. D. Murfey	108, 079
Journal-box	E. D. Murfey	108, 081
Journal-box	E. D. Murfey	108, 080

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Journal-box .....	E. H. Stearns .....	110, 086
Journal-box for railway-cars .....	A. L. Rapplee .....	107, 408
Journal-box, Grindstone .....	J. B. Sargent .....	106, 510
Journal-box, Railroad-car .....	C. Ibrig .....	105, 689
Journal, Lubricating .....	C. Bean .....	104, 821
Journals and bearings, Lubricating .....	I. P. Wendell .....	101, 551
Journals and bearings, Material for .....	E. D. Murfey .....	108, 722
Journals and bearings, Materials for packing .....	E. D. Murfey .....	102, 958
K.		
Kaleidoscope .....	M. Keller .....	105, 218
Keg, Powder .....	L. Austin and J. E. Hall .....	99, 280
Kegs, metallic, Securing heads to .....	W. Hill .....	108, 594
Kettle-bail .....	J. Britton .....	106, 115
Kettle for melting, mixing, and casting metals .....	W. S. Deeds .....	105, 553
Key .....	J. Linder .....	99, 577
Key .....	H. H. Elwell .....	105, 322
Key-boards for wood-pavements, Machine for making .....	P. D. Cummings .....	109, 591
Key, Door .....	J. Brady .....	103, 837
Key, Door .....	J. Brady .....	104, 823
Key for doors .....	H. H. Elwell .....	108, 466
Key for locks .....	W. Park .....	110, 491
Key for shafting .....	N. Stedman .....	110, 510
Key-guard .....	M. E. Berolzheimner .....	98, 736
Key guard and protector .....	H. M. Flanigan .....	99, 178
Key-hole escutcheon .....	S. W. Drowne .....	104, 838
Key-hole guard .....	J. L. Russell .....	99, 005
Key-hole guard .....	J. F. Bodtker .....	103, 288
Key-hole guard .....	J. H. Jones .....	106, 368
Key-hole guard-lock .....	H. R. Towne .....	103, 256
Key-ring and door-fastener, Combined .....	B. H. Melendy .....	105, 474
Keys with watches, Combining .....	A. Humbert .....	109, 620
Kiln .....	B. R. Hawley .....	107, 612
Kiln .....	P. C. Taylor .....	107, 735
Kiln, Brick .....	W. Ennis .....	99, 174
Kiln, Brick .....	R. D. Cox .....	99, 852
Kiln, Brick .....	S. M. Hamilton .....	99, 886
Kiln, Brick .....	S. M. Hamilton .....	99, 887
Kiln, Brick .....	S. M. Hamilton .....	101, 124
Kiln, Brick .....	O. Bennett .....	101, 416
Kiln, Brick .....	W. T. Mathews .....	102, 141
Kiln, Brick .....	C. A. Parker .....	105, 241
Kiln, Brick .....	E. C. Sterling .....	109, 150
Kiln, brick-burning, Perpetual .....	W. Gilbert .....	109, 815
Kiln for annealing glass .....	T. Lowry .....	100, 424
Kiln for burning tiles, pipes, &c .....	J. Hornsby .....	107, 496
Kiln for calcining ores, limestone, &c .....	C. W. Siemens .....	104, 655
Kiln for drying and burning brick .....	N. F. Potter .....	103, 500
Kiln, Lime .....	F. Shelly .....	99, 012
Kiln, Lime .....	R. A. Smith .....	101, 173
Kiln, Lime .....	J. Clarkson and G. W. Decker .....	102, 496
Kiln, Lime .....	T. Ennett .....	104, 291
Kiln, Lime .....	P. J. Gerbault-Guichard .....	106, 054
Kiln, Lime .....	D. Hills .....	106, 818
Kiln, Malt .....	J. G. White .....	100, 091
Kiln, Malt .....	C. P. Berekhemer .....	109, 105
Kindling-fagot .....	C. R. Jacobi .....	105, 213
Kindling-wood .....	M. T. Arnold .....	107, 319
King-bolt .....	F. B. Morse .....	103, 282
Kite-string holder .....	G. C. Sheldon .....	103, 668
Knee-lever for melodeon or organ swell .....	O. C. Whitney .....	105, 284
Knife .....	N. E. Babcock and G. D. Goodsell .....	101, 209
Knife and fork cleaner .....	H. and F. Wegner .....	106, 897
Knife, Butchers' .....	P. Houseman and C. C. Campbell .....	108, 141
Knife, Carving .....	O. W. Taft .....	102, 617
Knife-cleaning machine .....	T. Roberts .....	99, 480
Knife, Corn-stalk cutting .....	G. D. Goodsell and N. E. Babcock .....	99, 560
Knife, Counter .....	J. Teed .....	101, 542
Knife for cutting sheaf-bands .....	H. and E. B. Sears .....	104, 779
Knife for splitting wood .....	S. J. Raymond .....	101, 041
Knife, Fruit-coring .....	A. L. Harris .....	104, 954
Knife-grinding machine .....	E. S. M. Fernald .....	107, 884
Knife-guard .....	D. Perry .....	99, 701
Knife-guard .....	G. K. Dearborn .....	101, 236
Knife-handle .....	W. D. Woods .....	101, 201
Knife, Hay .....	M. Merrill .....	98, 876
Knife, Hay .....	C. Dittman .....	105, 049
Knife, Hay .....	D. H. Wile .....	108, 076
Knife, nut-cracker, and picker .....	G. A. Fairfield .....	101, 448
Knife, Orange .....	E. L. Cook .....	100, 862

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Knife-polisher .....	C. H. Lithgow .....	103, 210
Knife, Pruning .....	H. Alter .....	99, 390
Knife, Pruning .....	M. Grover .....	103, 873
Knife, Pruning .....	W. Richard .....	107, 542
Knife, Putty .....	S. W. Gerelds .....	98, 949
Knife-scourer .....	J. Q. Adams and S. R. Goodsell .....	101, 698
Knife-scourer .....	H. E. French .....	107, 674
Knife-sharpener .....	T. Vickery .....	100, 470
Knife-sharpener .....	S. C. Stokes .....	102, 727
Knife-sharpener .....	P. M. Withington .....	103, 113
Knife, Table .....	M. Chapman .....	106, 323
Knife, table, Handle of .....	J. A. White .....	108, 740
Knife, Vegetable .....	F. Durand and W. F. Gilbert .....	106, 473
Knife, Vegetable and fruit paring .....	H. Soggs .....	99, 119
Knitted goods, Mode of uniting edges of .....	S. Arnold .....	104, 532
Knit fabric .....	C. J. Appleton .....	107, 749
Knitting-machine .....	H. A. House .....	98, 500
Knitting-machine .....	H. V. Hartz and J. Feiss .....	99, 670
Knitting-machine .....	J. M. Howe .....	100, 765
Knitting-machine .....	F. Phillip .....	100, 798
Knitting-machine .....	H. B. Scudder .....	100, 810
Knitting-machine .....	A. G. Davis, C. W. Blakeslee, and A. N. Allen .....	101, 106
Knitting-machine .....	J. Hinkley .....	101, 875
Knitting-machine .....	H. A. House .....	101, 878
Knitting-machine .....	J. Pepper .....	102, 313
Knitting-machine .....	W. S. Hill .....	103, 352
Knitting-machine .....	D. C. Philip and C. and J. Tompkins .....	104, 346
Knitting-machine .....	W. Franz and W. Pope .....	105, 157
Knitting-machine .....	J. Hollen .....	105, 454
Knitting-machine .....	W. H. Abel .....	105, 537
Knitting-machine .....	W. H. Abel .....	105, 538
Knitting-machine .....	W. H. Abel .....	105, 539
Knitting-machine .....	V. G. Arnold .....	106, 025
Knitting-machine .....	E. Morse .....	106, 499
Knitting-machine .....	W. H. Abel .....	106, 531
Knitting-machine .....	O. Davis .....	107, 230
Knitting-machine .....	G. Johnstone .....	107, 351
Knitting-machine .....	F. M. Comstock .....	107, 454
Knitting-machine .....	C. J. Appleton .....	107, 750
Knitting-machine .....	W. W. Burson and J. Nelson .....	108, 003
Knitting-machine .....	J. and M. Lee and W. Carter .....	110, 479
Knitting-machine and needles .....	A. W. Allen .....	103, 793
Knitting-machine, Circular .....	W. Franz and W. Pope .....	99, 425
Knitting-machine, Circular .....	W. Franz and W. Pope .....	99, 426
Knitting-machine, circular, Setting-up device for .....	W. Franz and W. Pope .....	102, 529
Knitting-machine needle .....	J. F. Daniels .....	99, 647
Knitting-machines, Construction of cylinders of .....	C. H. Young .....	107, 318
Knitting-machines, Setting-up and tension-combs for .....	W. Gaskill .....	104, 014
Knitting-machines, Transferring and loop-retaining comb for .....	J. N. Kendall .....	103, 471
Knives and forks, Detachable handle for .....	L. Boynton and W. F. Sweet .....	100, 717
Knob, Door .....	G. W. Cady .....	104, 430
Knob for permutation-locks .....	H. Isham .....	98, 971
Knob for safe-doors .....	J. G. Kittredge .....	102, 132
Knob, Furniture .....	J. H. Shelton .....	109, 459
Knob-latch .....	F. P. Pfeighar .....	98, 795
Knob-latch .....	J. Davis .....	104, 712
Knob-latch, Reversible .....	J. Whittingham .....	100, 850
Knob-latch, Reversible .....	W. A. Hopkins .....	105, 334
Knob-latch, Reversible .....	A. M. Hill .....	108, 261
Knob, Picture .....	H. C. Luther and C. E. Richards .....	104, 609
Knob to spindles, Attaching .....	M. Andrew .....	101, 808

L.

Label for cotton-bales .....	P. H. Taylor .....	100, 467
Label holder and handle, Combination of .....	H. Manneck .....	106, 494
Labels on spools, Machine for printing .....	G. Hall, jr. .....	104, 951
Lacing for shoes .....	R. Wright .....	102, 352
Lace-paper, Machine for stamping .....	A. Giraudat .....	100, 749
Ladder .....	J. A. Thompson .....	101, 943
Ladder .....	W. H. McIlwain .....	102, 845
Ladder .....	J. Hughes .....	108, 483
Ladder, Extension .....	T. Watson and C. Perry .....	104, 803
Ladder, Extension .....	N. Pullman .....	105, 126
Ladder, Extension .....	J. W. Scott .....	107, 822
Ladder, Extension .....	T. Watson and C. Perry .....	110, 094
Ladder, Fruit .....	J. H. Verity .....	100, 219
Ladder, Fruit .....	C. S. and C. D. Cannon .....	106, 996
Ladder, fruit, Adjustable .....	S. Wright .....	106, 645



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Ladder, Fruit and extension . . . . .	M. Tuell . . . . .	101, 789
Ladder, lifting, Adjustable . . . . .	G. Claffin . . . . .	107, 125
Ladders, Bracket-hinge for . . . . .	J. H. Balsley . . . . .	99, 632
Ladder, Step . . . . .	J. H. Balsley . . . . .	99, 631
Ladder, step, Extension . . . . .	H. D. Chance . . . . .	106, 659
Ladies' safety-belt . . . . .	M. G. Porter . . . . .	99, 347
Ladle for pouring metals . . . . .	A. S. Wells . . . . .	100, 826
Lakes and colors, Apparatus for preparing . . . . .	J. Lucas . . . . .	108, 713
Lambrequin . . . . .	H. M. Johnston . . . . .	98, 974
Lambrequin . . . . .	H. M. Johnston . . . . .	105, 692
Lambrequin . . . . .	H. M. Johnston . . . . .	105, 693
Lamp . . . . .	J. F. Russell . . . . .	99, 482
Lamp . . . . .	H. M. Clark . . . . .	101, 534
Lamp . . . . .	S. W. Fowler . . . . .	101, 723
Lamp . . . . .	E. E. Lyon . . . . .	101, 748
Lamp . . . . .	L. E. C. Moore and J. S. Hamilton . . . . .	101, 902
Lamp . . . . .	J. B. Alexander . . . . .	101, 961
Lamp . . . . .	B. B. Schneider . . . . .	102, 163
Lamp . . . . .	F. V. Sleeth . . . . .	102, 168
Lamp . . . . .	J. S. and T. B. Atterbury . . . . .	102, 204
Lamp . . . . .	J. S. Fish . . . . .	102, 240
Lamp . . . . .	A. Burbank . . . . .	103, 011
Lamp . . . . .	J. B. Fuller . . . . .	103, 442
Lamp . . . . .	J. Hobbs . . . . .	103, 460
Lamp . . . . .	L. Sterling and T. W. Wilson . . . . .	104, 372
Lamp . . . . .	R. S. Merrill . . . . .	104, 481
Lamp . . . . .	R. S. Merrill . . . . .	104, 623
Lamp . . . . .	G. P. Fuller . . . . .	105, 063
Lamp . . . . .	D. Challinor . . . . .	105, 644
Lamp . . . . .	G. W. Thompson . . . . .	105, 867
Lamp . . . . .	F. McDaniels . . . . .	107, 276
Lamp . . . . .	R. S. Merrill . . . . .	107, 277
Lamp . . . . .	R. S. Merrill . . . . .	107, 278
Lamp . . . . .	G. H. Lomax . . . . .	107, 514
Lamp . . . . .	O. M. Chamberlain . . . . .	108, 106
Lamp . . . . .	J. Dunn . . . . .	108, 339
Lamp . . . . .	C. F. A. Hinricks . . . . .	110, 464
Lamp . . . . .	T. S. Williams . . . . .	110, 526
Lamp and gas burner, Shade for . . . . .	M. H. Collins . . . . .	108, 972
Lamp and lantern . . . . .	W. Harvie . . . . .	107, 366
Lamp, Candle . . . . .	T. Williams and F. A. Taber . . . . .	103, 810
Lamp, Candle . . . . .	T. S. Williams and F. A. Taber . . . . .	105, 020
Lamp, Cast-metal . . . . .	T. F. Hammer . . . . .	100, 398
Lamp-chimney . . . . .	G. W. Taylor and W. P. Jenney . . . . .	110, 398
Lamp-chimney cleaner . . . . .	J. Ryan . . . . .	105, 256
Lamp-chimney cleaner . . . . .	A. D. Smith . . . . .	108, 527
Lamp-extinguisher . . . . .	S. C. Catlin and A. Corbin . . . . .	99, 289
Lamp-extinguisher . . . . .	W. C. Ebert . . . . .	102, 026
Lamp-extinguisher . . . . .	J. Hughes . . . . .	103, 048
Lamp-extinguisher . . . . .	D. J. Powers . . . . .	103, 652
Lamp, Fluid . . . . .	T. Ward . . . . .	101, 192
Lamp for billiard-tables . . . . .	R. Klee-mann . . . . .	101, 888
Lamp for burning candles . . . . .	T. S. Williams and F. A. Taber . . . . .	104, 524
Lamp for halls, gardens, &c. . . . .	A. W. Wehrhan . . . . .	102, 995
Lamp for railroad-cars . . . . .	R. S. Merrill . . . . .	109, 537
Lamp-founts to brackets, chandeliers, &c., Attaching . . . . .	G. Bohner . . . . .	109, 864
Lamp, Gas . . . . .	J. H. Brown . . . . .	110, 005
Lamp, Glass . . . . .	D. C. Ripley, jr. . . . .	101, 512
Lamp, Glass . . . . .	D. C. Ripley . . . . .	107, 544
Lamp, Glass . . . . .	J. S. and T. B. Atterbury . . . . .	109, 369
Lamp-heating apparatus . . . . .	A. Rittenhouse . . . . .	109, 054
Lamp-lighter and burglar and fire alarm . . . . .	J. B. Irwin . . . . .	103, 338
Lamp, Safety-device for . . . . .	H. W. M. Washington . . . . .	108, 416
Lamps and taper-burners, Automatic lighting-attach- ment for . . . . .	W. H. Weeks . . . . .	99, 123
Lamps, Automatic lighting-wick for . . . . .	W. H. Weeks . . . . .	103, 110
Lamps, Feed-trap for . . . . .	M. W. House . . . . .	103, 334
Lamp-shade . . . . .	W. Robinson . . . . .	100, 450
Lamp-shade . . . . .	W. H. Johnson . . . . .	100, 533
Lamp-shade . . . . .	W. Reed, jr. . . . .	103, 928
Lamp-shade . . . . .	A. W. Haskell . . . . .	105, 940
Lamp-shade and reflector . . . . .	J. M. Kennerson . . . . .	106, 173
Lamp-shade holder . . . . .	C. St. John . . . . .	104, 898
Lamp-shade holder . . . . .	T. B. Peacock . . . . .	106, 866
Lamp-shade holder . . . . .	J. Foller . . . . .	107, 026
Lamp-shade supporter . . . . .	J. B. Alexander . . . . .	101, 409
Lamp-shade supporter . . . . .	E. W. Holt . . . . .	103, 885
Lamp-shade supporter . . . . .	E. E. Conrad . . . . .	104, 558
Lamps, Heating-apparatus for . . . . .	W. N. White . . . . .	108, 863
Lamps, Manufacture of . . . . .	J. S. and T. B. Atterbury . . . . .	109, 370
Lamps, Mica-chimney for . . . . .	J. Baird and W. Fisher . . . . .	106, 247

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Lamps, Safety-tube for.....	G. M. Hopkins and J. A. Straight .....	109, 735
Lamps, Screw-collar for.....	W. H. Russell .....	104, 066
Lamps, Shade-holder for.....	J. W. Lyon .....	102, 691
Lamps, street, Mode of lighting.....	H. Lenox .....	102, 234
Lamp, Street.....	J. F. Harly .....	99, 314
Lamp, Street.....	W. G. Schmidlin and J. W. Driscoll .....	101, 769
Lamp, Street.....	T. P. Austin .....	106, 764
Lamp, Street.....	E. Boesch .....	106, 990
Lamp, Street.....	G. Cuppers .....	107, 884
Lamp-wick.....	P. J. Skiuner .....	107, 299
Lamp-wick.....	P. Baker .....	110, 188
Lamp-wick.....	D. T. Robinson .....	110, 591
Lamp-wick feeder.....	G. Cade .....	101, 427
Lamp-wick regulator.....	L. W. Leary .....	107, 617
Landau-carriage door.....	E. Wells .....	100, 956
Land marker for corn-planting.....	A. C. Smith .....	103, 644
Land-roller and marker, Combined.....	H. F. Baker .....	110, 333
Lantern.....	T. Langston .....	98, 602
Lantern.....	E. F. Haskell .....	98, 962
Lantern.....	J. H. Irwin .....	99, 442
Lantern.....	C. Hart .....	100, 230
Lantern.....	A. Withmar .....	104, 578
Lantern.....	W. J. Berry .....	100, 845
Lantern.....	J. M. Jenness .....	102, 551
Lantern.....	S. Peters .....	102, 858
Lantern.....	W. Westlake .....	102, 895
Lantern.....	W. Westlake .....	102, 896
Lantern.....	L. W. Leary .....	103, 623
Lantern.....	J. H. Irwin .....	104, 313
Lantern.....	L. W. Leary .....	104, 745
Lantern.....	J. H. Irwin .....	105, 083
Lantern.....	D. Challinor .....	105, 170
Lantern.....	J. H. Irwin .....	105, 339
Lantern.....	McC. Young .....	105, 762
Lantern.....	W. Westlake .....	107, 140
Lantern.....	C. Tabor .....	107, 835
Lantern.....	P. Sweeney .....	108, 064
Lantern.....	W. Westlake .....	108, 221
Lantern.....	W. Westlake .....	108, 222
Lantern.....	C. S. and A. L. Baron .....	108, 430
Lantern.....	H. J. White .....	106, 856
Lantern and candlestick, Combined.....	M. A. Shepard .....	107, 551
Lantern, Astronomical.....	J. F. Clarke .....	110, 435
Lantern for streets.....	J. W. Bartlett .....	103, 823
Lantern, Globe.....	I. C. Mayo .....	102, 692
Lantern-guard.....	J. Kintz .....	104, 857
Lantern, Magic.....	A. Krüss .....	99, 211
Lantern, Street.....	J. Neumann .....	102, 305
Lanyard, Elastic.....	J. E. Jones .....	99, 320
Lap-board.....	W. F. Gammel .....	102, 530
Lap-board for dress-makers.....	R. L. Woodbury .....	106, 016
Lard and oil cakes, Apparatus for steaming.....	C. J. Yergason .....	103, 116
Lard, Apparatus for stirring and cooling.....	C. F. Ring .....	109, 543
Lard, butter, &c., Package for.....	G. M. Huntley .....	109, 739
Lard, Rendering.....	J. W. Patterson .....	103, 234
Lard, tallow, and other fats, Rendering.....	A. Smith .....	99, 250
Last.....	N. Jones .....	106, 591
Last.....	C. S. Dunbrack .....	109, 399
Lasting-machine.....	H. N. Moyon and J. E. Lemercier .....	101, 151
Lasting-machine.....	K. Grassan .....	101, 456
Last for machine-sewed turned-shoe.....	L. R. Blake .....	106, 459
Lasts, Fastening for blocks of.....	J. Bullivant .....	109, 492
Latch.....	F. W. Gammell .....	98, 664
Latch.....	J. A. Clark .....	99, 845
Latch.....	S. W. Drowne .....	100, 872
Latch.....	M. P. Favor .....	103, 314
Latch.....	T. Dolan .....	103, 586
Latch.....	A. A. Stuart .....	109, 074
Latch and lock, Combined.....	W. N. Bailey .....	98, 907
Latch and lock, Combined.....	F. P. Pileghar .....	100, 661
Latch and lock, Combined.....	C. L. Dean .....	100, 734
Latch and lock, Combined.....	F. Hoppe .....	102, 820
Latch and lock, Combined.....	T. Hahn .....	105, 197
Latch and lock for gates, Combined.....	H. R. Van Eps .....	106, 519
Latch and lock for sliding-doors, Combined.....	J. Capron .....	109, 298
Latch, Cupboard.....	W. E. Sparks .....	107, 418
Latch, Door.....	J. H. Vickers .....	103, 819
Latch, Door.....	W. T. Munger .....	109, 831
Latches, Automatic.....	E. Voigt .....	100, 226
Latches, Guard-bolt for.....	E. H. Kent .....	108, 361
Latch for cupboard.....	W. E. Sparks .....	104, 370

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Latch for gate	H. Clymo	103, 143
Latch for gates	J. Kindel	100, 044
Latch for gates	W. Shumard	101, 055
Latch for gates	W. R. Goodrich	104, 447
Latch for gates	E. Barks and L. H. Emmons	107, 589
Latch for gates, &c.	W. Patton	106, 955
Latch, Gate	E. E. Earll and J. B. Hunter	104, 287
Latch, Gate	J. Johnson and S. Ingersoll	104, 320
Latch, Gate	C. Cole	108, 971
Latch, Knob	J. T. Williams	107, 578
Latch, knob, Reversible	H. P. Appleton	107, 587
Latch or fastening for doors	J. R. Webber	104, 672
Latch, Reversible	W. T. Munger	100, 313
Latch, Reversible	W. B. Smith	101, 673
Latch, Reversible	W. E. Sparks	102, 723
Latch, Reversible	J. Kinzer	103, 053
Latch, Reversible	J. Kinzer	103, 054
Latch, Reversible	W. H. Andrews	105, 026
Latch, Reversible	C. F. Herrick	105, 075
Latch, Safety	J. W. Fifield	107, 895
Lathe	J. Watson	100, 473
Lathe	F. B. Mattson	104, 751
Lathe	P. H. Pitts	106, 404
Lathe	S. U. King	109, 912
Lathe-center	H. K. Porter	104, 995
Lathe, Centering-attachment for	D. Kelly	100, 772
Lathe-chuck	J. Rich	104, 063
Lathe-chuck	J. Rich	107, 291
Lathe-chuck	W. H. King	109, 423
Lathe-chuck, Automatic friction-dog	L. Coes	103, 015
Lathe-dog	J. B. West	99, 269
Lathe-dog	J. S. Skinner	106, 224
Lathe-dog	C. Buss	108, 325
Lathe for making awl-handles	F. Reed	104, 645
Lathe for setting jewels in time-pieces	H. H. Haskett	109, 891
Lathe for squaring nuts, &c.	J. Flower	101, 249
Lathe for turning ovals	R. Eickemeyer	101, 447
Lathe for turning wood	J. C. Brown	105, 166
Lathes and other machinery, Mechanism for transmitting power to.	F. Klinkermann and J. Lamb	102, 445
Lathe-spindle	J. E. Bontelle	101, 975
Lathe, Spoke	C. B. Conant and H. Thompson	100, 261
Lathe, Spoke	G. F. Almy	100, 856
Lathes, Slide-chuck for	C. F. Stackpole	106, 420
Lathes, Tool-elevator for	C. Knox	102, 278
Lathes, Tool-grinding attachment to	J. Shaughnessy	103, 242
Lathes, wood, Revolving center-rest for	H. J. Dargin	101, 596
Lathe, Turning	H. Locke	107, 513
Lathe, Wood	L. H. Dwellley	103, 063
Lathe, Wood-turning	N. Norris, and C. S. and H. S. Black	99, 696
Lathe, Wood-turning	L. Atwood and E. Ripley	99, 810
Lathe, Wood-turning	J. Chase	100, 855
Lathe, Wood-turning	O. H. Perry	101, 502
Lathe, Wood-turning	J. J. Urnston	101, 548
Lathe, Wood-turning	F. Baldwin	106, 767
Lathing-machine	G. N. Creamer	109, 391
Lath-machine	W. B. Noyes	98, 996
Lath-machine	J. Oothoudt	101, 653
Lath-machine	S. M. and G. E. Palmer	104, 637
Lath-machine	J. J. Knowlton	106, 374
Lath-machine	J. T. Hall	109, 005
Lath, Machinery for sawing	W. Tuxworth	98, 898
Lath, Machine for sawing	J. H. Butler	100, 722
Lath, Metallic, and billets from which the same may be produced.	J. Reese	104, 997
Lavatory-apparatus	D. Wellington	102, 737
Leaches for tanning	W. T. H. Wharton	110, 317
Lead from the precious metals, Separating	S. W. Kirk	109, 743
Leads, Method of fastening	J. Merlett	104, 622
Leaf-turner, Atmospheric	C. Phelps and A. K. Tuttle	109, 448
Leather, &c., Process and composition for water-proofing.	W. Morris	104, 629
Leather, Apparatus for tanning	O. W. Bean and W. B. Rowland	101, 213
Leather, Attaching dicing-stones to wheels for polishing	H. C. Havemeyer and D. P. Burdon	109, 205
Leather-buffing machine	S. D. Tripp	108, 216
Leather channeling and folding tool	A. H. Bailey and W. G. Bratton	98, 906
Leather, Compound for oiling, polishing, and blacking	G. F. Whitney	103, 402
Leather, Compound for stuffing and finishing	T. D. Williams	107, 579
Leather, Compound for treating	S. S. Walbank	110, 610
Leather-cutting machine	A. L. Zent	108, 229
Leather, Gauge-knife for cutting	C. T. Durham, J. Wood, and T. Hair	104, 436

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Leather, hides, and skins, Dyeing, &c	C. Bond	98, 466
Leather impervious to hydrocarbon liquids, Rendering.	A. Warth	108, 072
Leather, Machine for boarding	J. W. Hildreth	104, 454
Leather, Machine for boarding	M. B. Bishop	108, 319
Leather, Machine for cushioning and ventilating.	E. Thomas	105, 998
Leather, Machine for dressing	E. Fitzhenry	100, 387
Leather, Machine for removing grease from	J. Starratt	105, 506
Leather, Machine for rolling	J. A. Safford	98, 889
Leather, Machine for scouring and setting out	A. W. Reid	101, 508
Leather, Machine for scraping	J. T. Barnstead	101, 081
Leather, Machine for skiving	J. P. Crooks	108, 687
Leather, Machine for striking out.	S. Hutchison	102, 270
Leather, Manufacture of	W. Pyle	105, 247
Leather, Manufacture of	F. A. Holcomb	110, 465
Leather, Removing colors from	E. S. Frye	100, 997
Leather-renovator	W. G. Lumbard	108, 161
Leather-rolling machine	H. J. Weston	101, 197
Leather, Rolling-machine for	J. G. Curtis	101, 234
Leather-sammiar	D. C. Guttridge	99, 431
Leather-scarfing machine	C. H. Helms	100, 890
Leather-scouring machine	D. P. Burdon	105, 419
Leather-scouring machine	H. C. Havemeyer and D. P. Burdon	108, 782
Leather-scouring machine	H. C. Havemeyer and D. P. Burdon	108, 783
Leather-scap, &c., Preparation of artificial leather from	S. Sorenson	103, 517
Leather-splitting and fleshing machine	J. A. Safford	98, 888
Leather-splitting machine	C. S. Stearns	100, 082
Leather, Tanning	C. L. Jenkins	107, 177
Leather, Tanning and stuffing	W. B. Brittingham	98, 916
Leather, Treating hides and manufacturing	W. H. Fuller	110, 562
Ledger and fly blades, planer-knives, &c., Grinding	C. Hardy	104, 584
Ledger-index	C. A. Fitch and W. O. St. John	100, 994
Leech, Mechanical	F. A. Stohlmann	100, 210
Leg, Artificial	L. P. Pingree	104, 994
Leg, Stove and furniture	H. R. Robbins	104, 771
Lemon-squeezer	V. Himmer	101, 128
Lemon-squeezer	J. L. Jensen	104, 159
Lenses, &c., Machine for grinding and polishing	H. D. Knight	109, 325
Lens or glass for head-lights	H. C. Felthousen	110, 449
Letter-box	C. R. Bancroft	103, 826
Letter-box	E. T. Marsh	104, 043
Letter-box	A. Potts	109, 939
Lettering-block, Adjustable	E. J. Griffin	98, 762
Lever and stump-puller	J. G. Fox	99, 179
Lever, Ratchet	H. W. Millar	103, 763
Lid and plate lifter and pot-hook	T. Simpson	103, 247
Lid-fastening for burial-casket	W. Hamilton	107, 253
Life-boat	P. Heinrich	102, 261
Life-boat	T. Masac	103, 637
Life-boat	J. M. Starr	110, 600
Life-preserver	C. Krejci	100, 906
Life-preserver	L. Jacobs	102, 823
Life-preserver	T. B. Boyd	104, 546
Life-preserver	E. M. Crandall	108, 006
Life-raft	J. Rider	100, 191
Life-raft	D. McFarland	110, 059
Lifter for kitchen use	T. S. Coffin	99, 061
Lifting-machine	C. H. Mann	104, 973
Light from heavy hydrocarbons, Production of	R. S. Merrill	100, 915
Lightning-conductors, tubular, Machine for making	B. F. Housel and S. O. Thayer	107, 051
Lightning-rod	J. D. West	99, 381
Lightning-rod	D. Munson	99, 461
Lightning-rod	D. Munson	100, 549
Lightning-rod	G. Row	109, 455
Lightning rod and conductor	J. W. Hankenson	99, 184
Lights, street and other, Gas-carbonizing attachment for.	S. Whitney	107, 743
Lime and mortar, Preparation of	L. B. Pitcher	106, 282
Lime barrel or kibble	F. K. Winsor	103, 953
Lime from hard water, Device for removing	K. Frazer	106, 759
Lime-spreader	W. C. Burnett	104, 694
Line and wire tightener	T. Crosby	108, 766
Liniment	W. H. Barr	103, 411
Liniment	O. P. Hare	104, 146
Liniment	J. C. Branch and H. P. Quin	108, 963
Liniment for burns, scalds, &c	L. Wolf	101, 340
Liniment for the cure of rheumatism	A. A. Riddick	110, 283
Liniment for treating neuralgia, &c	G. L. Fearis	104, 721
Liniment, Horse and cattle	H. H. Hammer	109, 203
Lining and drying pasteboard, Machine for	G. L. Jaeger	102, 942
Lining Bessemer-converters	A. L. Holley	104, 592
Lining for fire-pot, Iron	E. A. Tuttle	109, 080

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Link, Adjustable.....	A. J. Dexter.....	103, 921
Link for connecting the handles and valve-rods of pumps.....	S. Selden and M. Griswold.....	107, 965
Link for endless-chain horse-power.....	G. E. Burt.....	108, 564
Link for operating the annular series of gates for turbine water-wheels.....	F. Trump.....	109, 560
Link for water-wheel gates, Adjustable.....	W. A. Parmele.....	105, 122
Linseed-oil, Process of purifying.....	R. T. Clarke.....	103, 141
Lint-room and cotton-press, Combined.....	I. H. Albertson.....	110, 327
Liquid, Conveying.....	T. Donnelly and J. H. and A. Anchors.....	104, 284
Liquid-cooler for cooling liquids under pressure.....	E. Bigelow.....	108, 318
Liquid for raising paste or dough.....	A. and G. Sauer and L. Cachal.....	106, 213
Liquid-gauge and hydrometer, Combined.....	S. R. P. Camp.....	103, 976
Liquid measure and funnel.....	J. Huff.....	106, 588
Liquids, Apparatus for ascertaining the amount of acid in.....	H. Twitchell.....	99, 976
Liquids, Apparatus for evaporating.....	G. F. Grey.....	103, 602
Liquids, Apparatus for measuring.....	E. F. Wilder.....	101, 069
Liquids, Apparatus for measuring.....	M. H. Wiley and T. Miller.....	103, 404
Liquids used in seasoning and preserving wood, Treating and recovering the.....	C. M. Cresson.....	109, 874
Liquor containing gelatine or glue, Treating.....	O. Lugo.....	100, 647
Liquors, alcoholic, Ageing.....	H. Purdy.....	108, 388
Liquors, alcoholic and vinous, Apparatus for deodorizing.....	L. Bradley.....	108, 588
Liquors, medicated malt, Manufacture of.....	H. Kessler.....	102, 833
Liquors, Refining and ageing.....	S. H. Gilman.....	102, 806
Liquor thief and measure.....	S. C. Catlin.....	110, 202
Lithographic copies from photographic negatives, Mode of producing.....	E. Rye.....	109, 551
Loading and dumping machine, Portable.....	W. D. Dorsey.....	110, 216
Loads on wire rope, Apparatus for transporting.....	C. Hodgson.....	109, 317
Loaf-sugar, Machine for cutting.....	A. and F. Brown.....	109, 293
Loaf-sugar, Machine for cutting.....	F. Brown.....	109, 295
Loaf-sugar, Machine for cutting.....	F. Brown.....	109, 296
Lock.....	L. Beer.....	98, 545
Lock.....	E. Fay.....	98, 577
Lock.....	H. S. Shepardson.....	99, 013
Lock.....	N. Petré.....	99, 344
Lock.....	Z. Sargent.....	100, 195
Lock.....	C. E. Dickerman.....	101, 355
Lock.....	E. Voight and P. P. Mathes.....	101, 684
Lock.....	M. O. Baker.....	103, 542
Lock.....	J. Brady.....	103, 838
Lock.....	J. Gérard.....	103, 868
Lock.....	W. M. Keefer.....	104, 598
Lock.....	T. Powers.....	107, 100
Lock.....	H. Willard and P. Trunz.....	107, 145
Lock.....	J. Brady.....	108, 098
Lock.....	J. Brady.....	108, 099
Lock.....	C. C. Dickerman.....	108, 770
Lock.....	H. Willard.....	110, 412
Lock, Alarm.....	T. P. Sink.....	109, 954
Lock and bolt spindle.....	J. Sargent.....	98, 623
Lock and latch, Combined.....	G. B. Allen.....	100, 708
Lock and latch, Combined.....	S. C. Weddington.....	107, 207
Lock and latch, Combined.....	F. M. Ranous.....	110, 071
Lock and latch for sliding-doors, Combined.....	C. J. Kehoe.....	109, 220
Lock, Bung.....	H. Fischer.....	108, 897
Lock, Canal.....	G. Heath.....	109, 899
Lock, Car-door.....	J. L. Howard.....	98, 967
Lock, Car-seat.....	E. Miller.....	105, 965
Lock, Car-seat.....	A. Loeffelholz and A. Prier.....	110, 254
Lock, Combination.....	S. Bentley and C. Mee.....	100, 714
Lock, Combination.....	F. B. Kalkbrenner.....	108, 360
Lock, Combination.....	S. K. Seelye.....	109, 457
Lock, Door.....	W. Andrews.....	101, 564
Lock, Door.....	J. Linder.....	104, 749
Lock, Electro-magnetic.....	H. Arden.....	108, 952
Locket for photographs, Tablet.....	G. W. Pitcher.....	105, 721
Lock, Faucet.....	V. L. Maxwell.....	102, 290
Lock for bags, &c.....	B. Steinmetz.....	107, 442
Lock for fire-arms.....	A. Young.....	104, 394
Lock for pianos, &c.....	H. Ahrend.....	107, 535
Lock for pipe-couplings.....	G. A. McIlhenny.....	105, 105
Lock for railroad-switches.....	A. W. Cram.....	109, 182
Lock for securing revenue-stamps on beer-barrels.....	F. Brackett.....	103, 711
Lock for securing stamps upon barrels.....	J. L. Harley.....	107, 176
Lock for sewing-machine case.....	H. O. Nauen.....	98, 616
Lock for sewing-machine case.....	H. O. Nauen.....	107, 401
Lock for ships' pumps.....	A. G. Zeising.....	100, 833
Lock for the meeting-rail of sashes.....	F. W. Judd and G. M. Hubbard.....	106, 830



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Lock for traveling-bag	J. B. Sargent	103, 781
Lock for umbrellas	H. Plumb	98, 797
Lock for wagon-seat	E. Hitt	100, 159
Lock, furniture, Automatic	J. T. Brown and I. Hird	108, 874
Lock, Indicator	E. M. and J. E. Mix	98, 513
Locking-bolt	H. Feyh	107, 350
Locks in hoops, Machine for cutting	A. Cutter	108, 114
Lock-nut	G. C. Heermance	99, 315
Lock-nut	M. Langhorne	99, 919
Lock-nut	A. C. Binns	101, 421
Lock-nut	E. R. Shepard	102, 600
Lock-nut	E. T. Ligon	103, 348
Lock-nut	U. B. Vidal	103, 689
Lock-nut	J. Miller, jr	108, 927
Lock-nut	P. Dyer, jr., A. Parker, and W. B. Way	108, 987
Lock-nut and splice-bar, Combined	J. L. Randolph	110, 499
Lock, Pad and trunk	R. L. McGowan	106, 849
Lock, Permutation	A. M. Adams	108, 951
Lock, Permutation	J. P. Schmucker	98, 523
Lock, Permutation	S. N. Brooks	98, 536
Lock, Permutation	J. Sargent	98, 632
Lock, Permutation	F. E. Isham	98, 972
Lock, Permutation	H. Gross	101, 362
Lock, Permutation	J. H. Larry	101, 632
Lock, Permutation	J. C. Hintz	103, 183
Lock, Permutation	H. Gross	103, 450
Lock, Permutation	W. Kock	104, 961
Lock, Permutation	W. F. Kistler	105, 091
Lock, Permutation	N. Macneale	105, 102
Lock, Permutation	W. Streeter	105, 383
Lock, Permutation	C. Diebold and J. Obernesser	106, 472
Lock, Permutation	H. Gross and J. L. Hall	107, 174
Lock, Permutation	L. H. Miller	107, 190
Lock, Permutation	M. Hainque	107, 251
Lock, Permutation	J. E. and L. P. Barnes	107, 590
Lock, Permutation	W. N. Hall	107, 705
Lock, Permutation	H. Gross	108, 134
Lock, Permutation	J. C. Hintz	108, 481
Lock, Permutation	E. W. Brettell	108, 561
Lock, Permutation	C. Flesch	110, 560
Lock, Permutation	F. H. Brown	108, 964
Lock, Piano	J. Thielemann and P. Meyer	103, 525
Lock, Piano	J. Murphy	107, 947
Lock, safe, Electro-magnetic	C. O. Yale	107, 993
Lock, Sash	G. W. Dubuisson	105, 787
Lock-spindle	J. L. Hall	105, 800
Lock, Time	C. F. Atwood	105, 291
Lock, Trunk	E. L. Gaylord	99, 553
Lock, Trunk	J. Terry, jr	107, 123
Lock, Trunk	J. Morgan	108, 166
Lock, Umbrella	H. Clarke	109, 386
Lock, Wagon	S. S. Hurlbut	107, 914
Lock, Watch-chain	S. Pinover	104, 640
Locomotive	W. A. Foster	107, 472
Locomotive	J. M. Ure	107, 983
Locomotive attachment	C. Lewis	107, 511
Locomotive head-light	R. W. Love	103, 905
Locomotive head-lights, Burner for	A. C. Vaughan	106, 971
Locomotives, Ash-pan for	L. H. Dee	105, 317
Locomotives, Device for adjusting the cross-heads of	J. D. Ackley and R. English	103, 407
Locomotives, Feed-water connecting-pipe for	C. A. Peavey	103, 494
Locomotives, Feed-water heater for	I. P. Magoon	101, 287
Locomotives, Feed-water heater for	J. S. Hooton	105, 207
Locomotives, Foot-board for	G. F. Morse	102, 299
Locomotives, Machine for re-turning crank pins of	N. Wright	99, 993
Locomotive-spark arrester	B. P. Freeman and P. Payton	103, 731
Locomotives, Valve-gear for	A. Onslow	103, 647
Locomotives, Water-supply pipe for	F. Gerrard	98, 685
Locomotive tender-loader	A. H. Spencer	99, 723
Log-loader	J. H. Harvey	103, 608
Log loader and piler	J. G. Brady	104, 548
Logotype	W. H. Wilkinson	106, 641
Logs, Apparatus for blasting	M. Cooke	102, 503
Logs, Hauling up	S. H. Richardson	103, 372
Logs, Machine for turning	W. E. Hill	106, 160
Logs, Machine for turning	E. H. Stearns	110, 398
Looking-glasses, signs, &c., Machine for ornamenting and lettering	W. M. Davis	108, 458
Loom	G. S. Faulkner	99, 177
Loom	J. R. Norfolk	99, 586
Loom	E. B. Bigelow	101, 088

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Loom	A. R. Field	101, 989
Loom	P. F. Ramel and J. Drogat	102, 039
Loom	C. W. Gilbert	103, 600
Loom	J. J. Herbert	103, 880
Loom	H. D. Davis	106, 334
Loom	L. M. Gilbert	106, 809
Loom	J. Miller	108, 281
Loom	W. J. Porter and W. Cross	108, 292
Loom	W. S. Laycock	110, 050
Loom	R. Whitehill	110, 524
Loom-cam	G. O. Wickers and T. J. McClary	100, 575
Loom-circular	C. Bryant	98, 738
Loom for weaving irregular fabrics	A. Goullioud	101, 006
Loom for weaving rattan	S. L. Fitts	106, 477
Loom, Hand	J. E. Nute	107, 094
Loom-harness, Machine for varnishing and dressing	E. J. Ellis	106, 676
Loom, Harness-operating mechanism for	R. Bleakie	103, 708
Loom, Lappet	W. Aspinall	104, 687
Loom, Let-off mechanism for	J. Day	102, 506
Loom, Let-off mechanism for	J. Magee	104, 328
Loom, Pattern-chain for	H. D. Davis	102, 094
Loom, Picker-check for	W. Montgomery	102, 145
Loom, Power	J. Bullough	98, 919
Loom, Power	T. H. Müller	99, 223
Loom, Roller-jaw temple for	W. H. Burns	99, 287
Looms, &c., Measuring-apparatus for	J. A. Bradshaw and S. L. Crockett	108, 871
Looms, Belt-shifting mechanism for	L. J. Knowles	106, 267
Looms, Cloth-winding mechanism for	W. A. Arnold	109, 794
Looms, Harness-operating mechanism for	G. S. Faulkner	99, 176
Looms, Harness-operating mechanism for	J. Ashworth	106, 306
Looms, Harness-operating mechanism for	A. R. Field	106, 571
Looms, Harness-operating mechanism for	J. C. Duckworth	103, 884
Loom, Shuttle for	E. F. Burrows	102, 368
Loom, Shuttle for	H. Carstacdt	107, 220
Looms, Let-off mechanism for	D. Long and J. Preston	99, 044
Looms, Let-off mechanism for	E. B. Bigelow	103, 415
Looms, Let-off mechanism for	L. N. Fletcher and I. M. Page	104, 949
Looms, Let-off mechanism for	M. C. Burleigh	106, 543
Looms, Mechanism for operating the pickers of	E. A. Wareham and W. H. Waggoner	107, 313
Looms, Mechanism for actuating the picker-staff in	M. C. Burleigh	106, 116
Looms, Mechanism for operating shuttle boxes in	L. J. Knowles	110, 146
Looms, Mechanism for stopping the shuttle in	S. Boorn	101, 817
Looms, Operating the picker-staff of	W. Rouse	107, 412
Looms, power, Let-off and tension-mechanism for	E. B. Bigelow	110, 000
Looms, Roller-temple for	W. W. Dutcher	106, 797
Looms, Roller-temple for	W. H. Burns	109, 583
Looms, Shuttle-driving mechanism for	J. Stever	99, 024
Looms, Shuttle for	H. Wells	103, 400
Looms, Shuttle for	J. Lofvendahl	103, 757
Looms, Shuttle-operating mechanism for	E. P. Terrell	110, 171
Looms, Stopping-mechanism for	J. Cowngill	110, 208
Looms, Warp-tension mechanism for	J. F. Randall	108, 826
Loom, Tappet-chain for	J. Nuttall	100, 794
Loom-temple	A. H. Gilman	104, 137
Loom, Temple for	W. H. Howard	103, 616
Loom, Warp-stand for	P. D. Tift	102, 989
Loop for harness	G. L. Du Laney and J. S. Huston	103, 311
Lounge	W. H. Colley	103, 301
Lounge and bed	A. Hansen	98, 589
Lounge, Bed	H. S. Carter	100, 257
Lounge, Extension	N. H. Hill	107, 494
Lounge, Folding	J. Beirsdorf	102, 360
Lounge, Folding	M. Marso	110, 578
Lounge, Sofa	C. Kurfiss	99, 778
Low lands, Device for filling	G. Howell	110, 468
Lozenge-machine	C. A. Oehl	99, 937
Lozenges and confectionery, Manufacture of	E. Greenfield	99, 879
Lubricating-apparatus for axle and journal boxes	J. B. G. M. F. Piret	103, 977
Lubricating, cooling, and washing vertical hammer shafts or stamps, Device for	Z. E. Coffin	107, 005
Lubricating-compounds, Manufacture of	E. B. S. Shoemaker	105, 499
Lubricating-device for bolt-threading machines	W. Armstrong	108, 673
Lubricating journals and bearings	I. P. Wendell	101, 551
Lubricating-journals for railway-axle boxes	E. Von Jeinsen	106, 096
Lubricating-sleeve, Automatic	S. R. Bartlett	106, 454
Lubricating the traversing-guide in machines for feeding carding-engines	B. S. Roy	100, 671
Lubricating the wheels in tread-powers, Mode of	S. D. Ely	100, 875
Lubricator	R. S. Hildreth	98, 655
Lubricator	T. Holland	99, 894
Lubricator	T. J. Nottingham	100, 437

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Lubricator.....	J. H. Wilkinson.....	101, 954
Lubricator.....	G. Gerdorn.....	102, 391
Lubricator.....	G. Gerdorn.....	103, 170
Lubricator.....	D. A. Greene.....	104, 139
Lubricator.....	D. Currie.....	104, 279
Lubricator.....	D. Adamson.....	104, 400
Lubricator.....	J. B. Wickersham.....	105, 750
Lubricator.....	W. Gee.....	106, 150
Lubricator.....	I. Dreyfus.....	106, 261
Lubricator.....	J. Meehan.....	106, 712
Lubricator.....	C. Nelson.....	106, 857
Lubricator.....	H. Pringle.....	106, 959
Lubricator.....	J. E. Hendrick.....	107, 044
Lubricator.....	T. J. Mooers.....	107, 192
Lubricator.....	J. Gates.....	107, 478
Lubricator.....	E. Von Jeinsen.....	107, 739
Lubricator.....	L. F. Smith.....	107, 826
Lubricator.....	I. Dreyfus.....	109, 118
Lubricator.....	C. D. Austin.....	109, 795
Lubricator.....	M. Hinman.....	110, 040
Lubricator.....	T. J. Nottingham.....	110, 156
Lubricator.....	J. L. Dickinson.....	110, 215
Lubricator.....	E. Von Jeinsen.....	105, 147
Lubricator, Car-axle.....	T. J. Mooers.....	98, 701
Lubricator, Car-axle.....	T. Sayles.....	107, 631
Lubricator, Car-axle.....	J. Lichestein.....	109, 525
Lubricator, Carriage-axle.....	J. Killefer.....	102, 403
Lubricator, Carriage-wheel.....	S. S. Vullum and W. H. Green.....	109, 977
Lubricator for axle-boxes, Self-acting.....	E. Von Jeinsen.....	105, 146
Lubricator for bearings of shafts.....	P. White.....	99, 890
Lubricator for loose pulleys.....	J. W. Rockway.....	102, 215
Lubricator for loose pulleys.....	I. P. Wendell and S. P. M. Tasker.....	102, 739
Lubricator for loose wheels.....	S. E. Peart.....	106, 614
Lubricator for steam-engines.....	F. Jackson.....	109, 968
Lubricator, Journal.....	J. A. Cowles.....	109, 870
Lubricator, Portable.....	H. Hammond.....	99, 082
Lubricator, Railway-car journal.....	T. Sayles.....	99, 351
Lubricator, Self-acting.....	W. B. Howe.....	103, 617
Lumber, Apparatus for washing and elevating.....	S. E. Worrell.....	100, 831
Lumber-drier.....	J. Allonas.....	98, 541
Lumber-drier.....	R. E. Ferguson.....	107, 892
Lumber, Process for seasoning.....	H. H. Beach.....	107, 854
Lumber-rack.....	C. Sach.....	99, 005
Lunch-valise.....	S. Foust.....	102, 103
<b>M.</b>		
Machine-band.....	S. J. Whitton.....	102, 898
Madder, Apparatus for extracting.....	J. Hunter.....	101, 735
Madder-extract, Obtaining.....	J. Hunter.....	99, 904
Magnesian limestone, Hardening.....	J. McMurtry.....	104, 619
Magnetic iron ores from other substances, Machine for separating.....	J. Y. Smith.....	100, 354
Magnetic machine for cleaning and separating ores of iron.....	J. Y. Smith.....	104, 221
Mail-bag fastener.....	D. G. Gay.....	108, 251
Mail-bags to cars, Device for delivering.....	J. B. McLain.....	109, 233
Mail-box.....	A. W. Allen and C. Reitz.....	107, 586
Making concave circular saws, Process for.....	T. S. Diston.....	109, 831
Mallet, Calkers'.....	S. C. Searles.....	100, 562
Mallet, Dental.....	J. A. Bidwell.....	103, 706
Malt-drier.....	W. L. Phillips.....	104, 347
Malting-grain.....	R. D'Heureuse.....	99, 541
Malt-liquors, Compound for treating.....	W. Zinsser.....	109, 990
Malt-reservoir.....	C. Stoll.....	110, 601
Mane-turner, Elastic.....	C. Phelps.....	110, 068
Manganese, Alloy of.....	E. Savage.....	99, 007
Mangling and ironing machine.....	S. Williams.....	109, 699
Man-hole plate for tannery-stuffing plate.....	H. Smith, jr.....	100, 939
Manure and fertilizer, Composting.....	D. Ruggles.....	103, 085
Manure-distributor and seed-sower.....	S. L. Fraser.....	108, 469
Manure-drag.....	W. Geahr.....	98, 487
Manure-drag.....	J. D. Heebner.....	106, 158
Manure fork and scraper, Combined.....	J. W. Clarke.....	102, 072
Manure-spreader.....	D. Hill.....	100, 762
Map-stand.....	W. F. Phelps.....	108, 625
Marble, artificial, Manufacture of.....	G. A. Frear.....	106, 263
Marble, Coloring.....	S. Gardner.....	99, 506
Marble, Compound for polishing and cleaning.....	P. Doyle and F. P. Colton.....	104, 285
Marble, Machine for polishing.....	E. and E. B. Price.....	99, 313
Marble, Machine for sawing.....	R. S. Craig and A. H. Woodward.....	100, 378

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Marble, Machine for sawing .....	J. E. French and J. M. Stephenson.....	107, 675
Marble, mother-of-pearl, &c., Compounding China clay to imitate.	D. Kaempfe and C. List .....	105, 089
Marble, Producing mosaics upon.....	C. C. Fitzgerald .....	104, 008
Marbles, Machine for grinding and polishing'.....	J. H. Volk .....	102, 184
Marble, Treating, to preserve it.....	C. C. Fitzgerald .....	104, 007
Marine-drag .....	J. Faunce .....	100, 021
Marine engines, Apparatus for signaling the direction of motion of.	A. R. Harris .....	105, 071
Mariners' compass .....	J. and G. H. Bliss .....	103, 286
Mariners' compass .....	J. and G. H. Bliss .....	103, 287
Mariners' compass, Correcting the deviation of .....	L. F. A. Arson .....	103, 701
Marker for carpenters.....	G. M. Nickason .....	98, 617
Manger.....	C. E. Albright .....	103, 956
Mash for grain, Saccharifying .....	C. H. Frings .....	109, 887
Mashing-machine .....	A. Harris .....	105, 331
Masts, Apparatus for attaching standing-rigging to.	J. Nute .....	107, 093
Masts of vessels .....	E. E. Holley .....	100, 151
Mat .....	S. Lewis .....	108, 160
Match-box .....	J. H. Goodfellow and M. Russell, jr.....	102, 807
Match-box .....	J. Monaghan .....	109, 235
Match-case .....	F. B. Coleman .....	102, 499
Match for cigar-lighters .....	W. Porter .....	109, 660
Matches, friction, Pocket-safe for .....	J. S. Norton .....	99, 224
Match-machine .....	L. T. Luther .....	99, 780
Match-safe .....	G. Geer .....	102, 676
Match-safe.....	A. D. Judd .....	102, 828
Match-safe.....	C. Goldthwait .....	108, 346
Match-splints, Machine for making.....	D. Burhaus .....	106, 319
Match-stick.....	J. K. Robinson .....	105, 727
Material for baskets, Machine for cutting .....	L. H. Bridgeman .....	107, 654
Material for bearing-surfaces in machinery .....	J. Schieder .....	110, 163
Material for packing and bearing .....	E. D. Murfey .....	105, 365
Materials for journals, bearings, and packings, The manufacture of.	E. D. Murfey.....	110, 584
Materials to form artificial stone, &c., Machine for mixing.	J. S. Elliott .....	110, 023
Mattress, Columnar .....	H. E. Smith .....	103, 096
Mattresses and furniture, Spiral spring for.....	S. P. Kittle .....	98, 505
Mattress, Life-preserving.....	J. Hunt .....	107, 499
Mattress, Spring .....	W. B. Judson .....	107, 323
Mattress, Spring .....	C. Fulton .....	108, 128
Mattress, Woven-wire.....	G. C. Perkins .....	109, 446
Maxillary compress.....	C. E. Davis .....	107, 011
Meal chest or bin .....	W. B. Smith .....	108, 403
Measure, Foot.....	J. C. F. Bremser .....	106, 314
Measure, Liquid.....	M. McDewitt .....	100, 307
Measure, Liquid.....	T. W. Ellis .....	104, 129
Measure, Tailors'.....	I. Moses .....	103, 487
Measuring and registering device, Liquid .....	A. Werrkmeister .....	100, 475
Meat and other articles of food, Preservation of .....	F. Cassell .....	104, 465
Meat and vegetable chopper .....	S. F. Emerson .....	99, 301
Meat and vegetable masher'.....	G. A. Anderson and C. J. Baker.....	108, 083
Meat and vegetable slicer.....	P. H. Lindsey .....	107, 932
Meat-chopper.....	A. McCarter .....	104, 049
Meat-chopper.....	J. H. DePoe .....	104, 940
Meat-chopper.....	A. R. Silver .....	106, 879
Meat-chopper.....	J. A. Eberly .....	107, 466
Meat-chopper.....	G. H. Mellen .....	108, 809
Meat, cooking by steam, Apparatus for .....	G. H. Munroe .....	102, 302
Meat, Curing and preserving.....	A. Rock .....	105, 851
Meat, Device for tendering or chopping.....	F. W. Coddling .....	104, 706
Meat, fish, oysters, &c., Preserving.....	J. E. Dotch .....	108, 983
Meat-mangler.....	J. T. Harvey and W. Dixon.....	103, 021
Meat-pounder, block, and chopping-bowl.....	G. B. Mill .....	100, 545
Meat, Preparing and preserving.....	H. Endemann .....	103, 728
Meat, Preserving.....	H. Gahn .....	99, 180
Meat, Preserving.....	L. H. Spear .....	106, 632
Meat, Preserving.....	F. H. Hatch and B. R. Hawley.....	107, 367
Mechanism for making wire-heddles .....	E. T. Hertle and R. Thompson.....	102, 122
Mechanism for relieving the pressure on shuttle-box swell.	J. Potter .....	99, 786
Mechanism for stopping the delivery-rollers of spinning-machines.	H. Bottomley and P. Greenwood.....	98, 549
Mechanism, Water-power .....	A. French .....	103, 439
Medicine .....	E. Miller .....	108, 504
Medicine-case.....	A. Button .....	103, 012
Medicine for nervous diseases.....	J. F. Smith .....	98, 809
Medicine or cough sirup.....	G. W. Chatfield .....	101, 096
Medicine or pain remedy.....	J. J. Mills and W. Perry.....	108, 811
Medium for turning music-sheets.....	A. Kraft .....	109, 023

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Melodeon.....	J. C. Briggs.....	107, 655
Melodeon.....	T. Brett.....	103, 560
Melodeons, Basso-tenuto for.....	A. Zawadzki.....	102, 353
Melody-attachment.....	C. Fogelberg.....	101, 452
Melody-attachment for organs.....	C. Fogelberg.....	101, 605
Merchandise, Elevator for.....	W. McNaughten.....	110, 382
Mercurial pressure-gauge, Adjustment of.....	M. E. Campfield.....	102, 464
Metal, Apparatus for corrugating.....	J. Montgomery.....	102, 849
Metal, Apparatus for rolling.....	G. H. Sellers.....	98, 807
Metal, Apparatus for rolling.....	J. I. Williams.....	98, 990
Metal articles, Coating with India-rubber.....	C. Hingher.....	106, 585
Metal bars, Machine for rolling.....	T. Fowler.....	102, 389
Metal, Beveling the edges of circular plates of.....	W. H. Singer.....	109, 953
Metal, Casting.....	R. Ross.....	101, 046
Metal, Compound machine for upsetting, punching, and cutting.....	W. Hunt.....	107, 500
Metal, Four-high roll for rolling.....	G. F. McCleane.....	104, 177
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 861
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 862
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 863
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 864
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 865
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 866
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 867
Metaline, Composition of matter called, for journals, bearings, &c.....	S. Gwynn.....	101, 868
Metaline, Process of forming compositions of matter called, for journals, bearings, steps, &c.....	S. Gwynn.....	101, 869
Metallic alloy for plow mold-boards.....	S. L. Madge.....	98, 874
Metallic cap for tin cans.....	G. H. Perkins.....	104, 193
Metallic cartridge-shells, Device for manufacturing.....	E. A. Worthen.....	109, 791
Metallic castings, Mold and core for.....	W. Hainsworth.....	109, 894
Metallic roofing-plates, Seaming the ends of.....	G. A. Reynolds.....	107, 230
Metallic vessels, Machine for soldering.....	E. T. Covell.....	106, 257
Metallurgic and other furnaces, Feeding pulverized fuel to.....	J. D. Whelpley and J. J. Storer.....	103, 804
Metal, Machine for grinding and polishing.....	J. H. Pitkin and J. S. Lane.....	108, 822
Metal, Machine for engraving and chasing articles of.....	T. Lippiatt.....	102, 950
Metal, Machine for punching.....	E. Doty.....	102, 924
Metal, Machine for shearing.....	E. Doty and H. Richardson.....	101, 356
Metal, Machine for shearing.....	A. A. Kent.....	107, 179
Metal or alloy, Composition.....	W. Schrier.....	103, 089
Metal plate of iron and steel.....	J. Myers, jr.....	108, 042
Metals and minerals, Flux for working.....	S. W. Kirk.....	109, 021
Metals, Apparatus for forging.....	T. Shaw.....	99, 953
Metals, Coating.....	J. D. Grüneberg.....	102, 254
Metals, Composition for welding, puddling, and brazing.....	A. J. Hindemeyer.....	108, 138
Metals, Crucible-stand for fusing.....	J. C. McManus.....	104, 179
Metals, Device for cutting and shearing.....	I. Dubois.....	109, 192
Metals, Electro-deposition of.....	I. Adams, jr.....	100, 961
Metals, Kettle for melting, mixing, and casting.....	W. S. Deeds.....	105, 553
Metals, Machine for cutting and shaping.....	C. Van Haagen.....	110, 609
Metals, Machine for drilling.....	G. C. Taft.....	99, 495
Metals, Machine for rolling.....	W. H. Ward.....	103, 397
Metals, Machine for rolling.....	A. Kloman.....	105, 950
Metals, Machine for scouring and burnishing.....	J. B. Lyons.....	101, 479
Metals, Separating and refining.....	C. S. Eyster.....	104, 130
Meter.....	G. Sewell.....	106, 103
Meter, Fluid.....	H. C. Sergeant.....	103, 509
Meter, Fluid.....	F. Wagner.....	109, 359
Meter, Gas.....	F. Brattan.....	99, 285
Meter, Gas.....	H. J. Hyams.....	107, 380
Meter, gas, Dry.....	P. Hodge.....	108, 263
Meter, gas, Dry.....	G. Lowen and S. H. Goldthorp.....	109, 230
Meter, Grain.....	J. T. Keeling.....	103, 470
Meter, Grain.....	F. C. Chesman.....	105, 427
Meter, Liquid.....	A. K. Rider.....	98, 634
Meter, Liquid.....	F. Wagner.....	99, 266
Meter, Liquid.....	T. C. Hargrave.....	101, 125
Meter, Liquid.....	N. L. Blanchard.....	102, 650
Meter, Liquid.....	S. C. Treat.....	102, 883
Meter, Liquid.....	R. Crenzbaur.....	103, 989
Meter, Liquid.....	R. Crenzbaur.....	103, 990
Meter, Liquid.....	J. P. Smith.....	105, 379



*Alphabetical list of inventions—Continued*

Invention or discovery.	Name of patentee.	No.
Meter, Liquid.....	H. C. Sergeant.....	106, 878
Meter, Liquid.....	W. H. Fruen.....	107, 607
Meter, Liquid.....	W. Fischer.....	107, 769
Meter, Liquid.....	G. B. Massey.....	108, 804
Meter, Liquid.....	W. E. Snediker.....	108, 842
Meter, Liquid.....	P. Ball and B. Fitts.....	109, 372
Meter, Liquid.....	A. Werckmeister.....	109, 564
Meter, Liquid.....	C. Moore.....	110, 062
Meter, Liquor.....	W. F. Class and W. Napp.....	98, 667
Meter, Power.....	J. A. Bradshaw, W. H. Brown, and D. Whithed.....	107, 331
Meters, fluid, Device for actuating the valves of.....	D. B. Spooner.....	107, 830
Meter, Water.....	O. Gilmore.....	98, 686
Meter, Water.....	J. F. Kelley.....	99, 909
Meter, Water.....	A. W. Ahnqvist and F. W. Ofeldt.....	109, 964
Meter, Water.....	T. Sweeney.....	101, 059
Meter, Water.....	G. W. Smith.....	101, 323
Meter, Water.....	G. Sickels.....	102, 976
Meter, Water.....	G. Sickels.....	103, 379
Meter, Water.....	G. B. Wiggins.....	104, 675
Meter, Water.....	W. M. Fuller.....	104, 950
Meter, Water.....	B. Densmore.....	106, 792
Meter, Water.....	A. Morse.....	106, 852
Meter, Water.....	J. W. Groat.....	107, 900
Meter, Water.....	O. Gilmore.....	108, 344
Meter, Water and gas.....	N. L. Blanchard.....	101, 347
Method of laying off patterns for stitching on leather.....	W. P. Wolfington.....	100, 579
Mica, Preparation of.....	H. M. Johnson and F. Beck.....	109, 416
Middlings, Machine for separating.....	W. R. Middleton.....	108, 936
Middlings-purifier.....	L. G. Binkley.....	110, 425
Mildew and decay in sails, awnings, tents, tarpaulins, &c., Preventing.....	W. A. Torrey.....	102, 450
Milk-box.....	C. W. Eastwood.....	99, 417
Milk-can bottoms, &c.....	T. M. Bell.....	104, 924
Milk-can fastener.....	D. D. Edgerton.....	109, 400
Milk-can handle.....	H. W. Shepard.....	103, 923
Milk-can, Handle for.....	A. C. Beckwith and G. H. Graham.....	107, 855
Milk-carrier.....	L. Morris.....	110, 152
Milking-apparatus.....	A. C. Black.....	99, 053
Milk-pail with strainer-attachment.....	L. M. Doddridge.....	103, 158
Milk-receptacle.....	G. M. Filmore.....	110, 348
Milk-strainer.....	P. S. Ryan.....	109, 763
Milk tempering and cooling apparatus.....	I. B. Tuttle.....	99, 502
Mill, Bark.....	J. G. Curtis.....	101, 984
Mill, Bark.....	R. H. Shultis.....	103, 246
Mill, Bark.....	L. N. Hermance.....	103, 881
Mill, Bark.....	C. Korn.....	107, 923
Mill, Burr.....	S. G. Rollins.....	109, 841
Mill-burr feeder.....	A. P. Lawsha.....	102, 279
Mill-bush and other spindles.....	C. T. Weston.....	109, 565
Mill, Cane.....	L. Biddle.....	104, 544
Mill, Cider.....	O. S. Garretson.....	98, 757
Mill, Cider.....	P. Males.....	107, 187
Mill, Cider.....	L. R. Taylor.....	107, 424
Mill, Cider.....	J. K. P. Smith.....	108, 045
Mill, Cider.....	J. Lytch.....	109, 527
Mill, Circular-saw.....	P. Neeb.....	101, 760
Mill, Circular-saw.....	T. H. Russell.....	106, 729
Mill, Circular-saw.....	W. Bowman.....	107, 861
Mill, Coffee.....	T. W. Brown.....	105, 545
Mill, Coffee.....	J. C. Milligan.....	105, 966
Mill, Coffee.....	F. C. Richer.....	106, 407
Mill, Fanning.....	J. L. Runk and B. H. Tharp.....	101, 514
Mill, Fanning.....	B. Cortrite.....	101, 713
Mill, Fanning.....	H. Ogborn.....	106, 395
Mill, Fanning.....	D. Kane.....	106, 831
Mill, Fanning.....	G. E. Clark.....	107, 759
Mill, Fanning.....	C. Peterson.....	108, 049
Mill, Fanning.....	H. K. Averill.....	108, 953
Mill, Fanning.....	L. Bronson.....	110, 196
Mill, Fanning.....	F. Sauer and J. Coerver.....	110, 291
Mill, Fanning and smut.....	H. Littlefield.....	100, 908
Mill, Flour and grist.....	A. J. Vandegrift.....	107, 311
Mill, Flouring.....	U. Bowman.....	103, 003
Mill for grinding bones.....	A. and E. Lister.....	107, 184
Mill for grinding corn, &c.....	J. J. Johnson.....	99, 205
Mill for powdering roots, &c.....	H. D. Garrison.....	109, 196
Mill for rolling grooved-metal arches.....	W. S. Levake.....	99, 329
Mill, Fulling.....	W. and F. Bates.....	104, 819
Mill-gearing.....	H. M. Smith.....	104, 783
Mill-gearing.....	H. Shoemaker and J. A. McClintock.....	109, 063

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Mill, Grinding .....	E. H. Vining .....	100, 824
Mill, Grinding .....	C. H. Roberts .....	101, 917
Mill, Grinding .....	W. Peck .....	102, 588
Mill, Grinding .....	A. J. and W. M. Vandegrift .....	103, 106
Mill, Grinding .....	P. Kraus .....	103, 626
Mill, Grinding .....	J. G. Baker .....	104, 537
Mill, Grinding .....	S. T. Eck .....	104, 946
Mill, Grinding .....	D. Halladay .....	105, 448
Mill, Grinding .....	G. and H. O'Conner .....	105, 592
Mill, Grinding .....	G. Mitchell .....	106, 271
Mill, Grinding .....	J. A. Forsman .....	107, 353
Mill, Grinding .....	A. Verbeek .....	107, 640
Mill, Grinding .....	J. M. Westmoreland .....	109, 361
Mill, Grinding .....	J. H. Rusk .....	110, 397
Mill, Grist .....	C. T. Weston, S. Broadbent, and W. B. Culver .....	104, 384
Mill, Hide .....	J. P. Friend and B. R. Annable .....	100, 519
Mill, Hominy .....	W. C. Coombs .....	98, 565
Mill, Hominy .....	E. M. Coombes .....	105, 430
Mill, Hominy .....	J. K. Leedy .....	108, 036
Milling-machine .....	J. Watson .....	98, 821
Milling-machine .....	L. Chapman .....	99, 059
Mill, Iron-rolling .....	A. D. Kloman .....	105, 952
Mill, Mortar .....	J. McIntyre .....	104, 870
Mill, Mortar .....	L. B. Pitcher .....	105, 840
Mill, Mud and ore .....	J. Kellet .....	107, 503
Mill, Paint .....	J. W. Masury .....	107, 939
Mill, pendulum, Crushing .....	J. Hart .....	109, 006
Mill-pick .....	S. G. Williams .....	107, 745
Mill, Quartz .....	T. Walker .....	105, 527
Mill, Rolling .....	J. Montgomery .....	99, 221
Mill, Rolling .....	D. I. Jones .....	106, 063
Mill, Rolling .....	J. H. Jones .....	110, 369
Mills, Attachment to .....	N. Bryan .....	108, 442
Mill, Saw .....	T. E. Chandler and J. C. Bartholomew .....	98, 558
Mill, Saw .....	A. Perin .....	101, 034
Mill, Saw .....	C. D. Moore .....	101, 300
Mill, Saw .....	E. Andrews .....	101, 343
Mill, Saw .....	E. H. Hull .....	101, 465
Mill, Saw .....	H. F. and G. S. Snyder .....	101, 531
Mill, Saw .....	C. Taylor .....	102, 065
Mill, Saw .....	E. Higley .....	102, 263
Mill, Saw .....	C. Warren .....	103, 261
Mill, Saw .....	W. M. Wilkin .....	103, 952
Mill, Saw .....	M. P. Campbell .....	105, 302
Mill, Saw .....	P. and M. C. Jobson .....	105, 804
Mill, Saw .....	C. Purdy .....	106, 960
Mill, Saw .....	J. A. Dorr .....	107, 886
Mill, Saw .....	F. T. Stevens .....	108, 201
Mill, Saw .....	D. G. Gay .....	108, 250
Mill, Saw .....	W. M. Wilkin .....	108, 665
Mill, Saw .....	M. Delude .....	108, 981
Mill, Saw .....	B. F. and D. Richardson .....	109, 052
Mill, Saw .....	J. R. Hoffman .....	110, 236
Mill, Saw .....	C. M. Flint .....	110, 451
Mill-saw, Circular .....	J. Mills and G. Waldo .....	100, 784
Mill-saw, Circular .....	J. R. Luce .....	105, 100
Mill-saw, Circular .....	E. W. Becket .....	105, 294
Mill-saw, Reciprocating .....	E. Rhodes .....	105, 370
Mills, circular-saw, Log-guide for .....	B. Fitts .....	109, 605
Mill, Smut .....	D. W. Marmon .....	100, 913
Mill, Smut .....	W. C. Thompson .....	105, 999
Mill, Smut .....	J. A. Benzling .....	110, 191
Mill-spindle driver .....	J. M. Logan .....	103, 211
Mill, Stamping, or crusher .....	G. F. Case .....	110, 010
Millstone balance and cooler .....	W. B. Dolson .....	104, 283
Millstone bearing .....	P. Planendon .....	106, 283
Millstone bush and bearing .....	A. Ortlip .....	108, 045
Millstone-curb .....	A. Van Vleck and T. Phillips .....	105, 610
Millstone-dress .....	G. W. Loy .....	100, 537
Millstone-dress .....	D. Bowman .....	104, 107
Millstone-dress .....	W. G. Dunniway and H. Osburn .....	105, 186
Millstone-dress .....	J. P. H. Wohlenberg .....	108, 422
Millstone, Hanging .....	G. and H. O'Connor .....	109, 542
Millstone, Machine for dressing .....	H. P. Straub .....	108, 405
Millstones, Apparatus for dressing .....	J. Pepler .....	109, 046
Millstones, Apparatus for dressing and furrowing .....	H. Robinson and J. Smith .....	109, 760
Millstones, Apparatus for dressing and furrowing .....	J. L. Norton .....	109, 928
Millstones, Apparatus for dressing and furrowing .....	J. L. Norton .....	110, 064
Millstones, Hanging .....	C. Schneider .....	105, 496
Millstones, Machine for dressing .....	W. Picken and P. Dalrymple .....	102, 968

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Millstones, Method of putting face-dress on.....	J. S. Braley and J. A. and P. L. Schmitt.....	106, 540
Mills, Wine and cider .....	W. K. Foltz and W. A. McCool.....	100, 517
Mill, Wind.....	H. M. Wheeler.....	99, 988
Mill, Wind.....	W. D. Nichols.....	102, 032
Mill, Wind.....	A. P. Brown.....	102, 364
Mill, Wind.....	J. P. Clement.....	109, 496
Mill, Wind.....	A. R. Randall.....	109, 545
Mineral and fossil substances, Machine for separating.....	R. George.....	106, 047
Mineral and other hard substances, Machine for crushing.....	D. C. Ebaugh.....	105, 659
Mineral waters, Preparation of mineral baths to imitate.....	O. Gavron.....	104, 446
Mining-apparatus, Hydraulic.....	T. Watson.....	108, 658
Mining-apparatus, Hydraulic.....	F. H. Fisher.....	110, 222
Mirror and picture frame .....	W. McConnell.....	101, 617
Mirrors to furniture, Mode of suspending.....	L. Pierce.....	100, 663
Miter-box.....	J. Bullard.....	99, 398
Miter-box.....	H. N. Burr.....	105, 421
Miter-box.....	E. M. Wilcox.....	105, 752
Miter-box.....	J. Devoge.....	109, 110
Miter-box.....	C. F. Linscott.....	109, 915
Miter-box and saw.....	D. McAllister.....	104, 975
Mitering-machine.....	J. Holtzberger.....	105, 686
Mitering-machine.....	E. Shaw.....	106, 218
Miter-machine.....	F. Nonnenbacher.....	101, 497
Miter-machine.....	F. C. Jones.....	103, 341
Miter-machine.....	J. R. Howell.....	104, 458
Miter-machine.....	D. B. Ware.....	106, 894
Miter-machine.....	L. W. Rosencrans.....	108, 296
Mixing, heating, and cooling substances, Apparatus for.....	M. Nolden.....	107, 621
Mold and bottom board, Brick.....	A. T. Putnam.....	102, 862
Mold and cone for metallic castings.....	W. Hainsworth.....	109, 894
Mold-board for plow .....	J. Lane.....	107, 925
Mold, Brick.....	M. T. Glimsdal.....	101, 608
Mold, Brick.....	G. Graessle.....	109, 313
Mold, Brick.....	S. H. Taylor.....	109, 778
Mold, Cigar.....	N. H. Borgfeldt.....	109, 490
Mold for artificial teeth.....	E. Sweet.....	102, 615
Mold for car-wheels.....	J. K. Sax.....	104, 777
Mold for casting metals.....	H. Davies.....	98, 673
Mold for casting pipe.....	J. Edson.....	101, 842
Mold for casting solder, &c.....	A. Schoenberg.....	101, 318
Mold for casting under pressure.....	J. B. Tarr.....	110, 307
Mold for drying cigar-fillings.....	S. B. Jerome.....	107, 266
Mold for glass lamps.....	D. C. Ripley.....	104, 285
Mold for making combined ingots of steel and iron.....	P. Doyle.....	99, 299
Mold for making glassware.....	J. B. Lyon.....	110, 056
Mold for making rubber pencil-tips.....	W. Weicker.....	102, 894
Mold for metals.....	J. W. Hollingsworth.....	101, 877
Mold for shaping and drying cigar-bunches.....	A. Pearl.....	108, 290
Mold for stereotypes.....	M. Nelson.....	102, 304
Mold for vulcanizing rubber pencil-tips.....	J. Banigan and G. W. Miller.....	99, 045
Molding and clarifying horn.....	E. F. Coffin.....	101, 587
Molding and glazing forms made of plastic material.....	S. Hart.....	99, 083
Molding and venting machine.....	W. Newsham.....	106, 273
Molding-flask.....	J. McLaughlin.....	106, 850
Mold, Ingot.....	Z. S. Durfee.....	107, 766
Molding-machine.....	T. Glover.....	106, 264
Molding-machine, Variety.....	N. Jenkins.....	99, 202
Molding sash-weights.....	W. W. Pullis.....	101, 504
Moldings, Machines for fluting.....	R. Van Riper.....	105, 145
Moldings, Machine for sand-papering.....	F. G. Chapman.....	103, 717
Moldings, Machine for sand-papering.....	J. Barker.....	106, 536
Moldings, picture-frames, &c., Composition for.....	H. Wurz.....	99, 739
Molds and other articles with a metallic surface, Mode of covering.....	J. A. Adams.....	99, 806
Molds, Brick and other.....	J. McAlpin.....	101, 896
Molds for casting mackerel-jigs.....	G. Bossett.....	105, 887
Molds, Machine for forming.....	J. J. Peet and D. Sawyer.....	101, 033
Molds, Machine for producing.....	S. J. Peet.....	100, 319
Mold, Spoon.....	L. and N. S. Boardman.....	104, 822
Mold, Water-pipe.....	H. Knight.....	105, 954
Mole-ditching machine.....	A. Peterson.....	106, 721
Money-safe.....	P. Schreye.....	101, 770
Mop.....	C. L. W. Baker.....	106, 986
Mop and rubber scrubber.....	B. C. Davis.....	99, 648
Mop and scrubber head.....	E. H. Shoemaker and S. McCleery.....	99, 603
Mop and scrubber head.....	W. H. Kline.....	108, 364
Mop-head.....	W. S. Krinklaw.....	100, 987
Mop-head.....	H. Dodge.....	101, 716

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Mop-head .....	W. H. Beatty .....	103, 413
Mop-head .....	O. and J. G. Garretson .....	107, 987
Mop-head .....	W. P. Valentine .....	108, 384
Mop-head .....	F. C. Kendall .....	109, 421
Mop-head .....	L. Williams .....	110, 180
Mop-head and wringer, Combined .....	W. Gage .....	106, 684
Mop-mat and wiping-cushion .....	H. E. Smith .....	101, 777
Mop-wringer .....	C. Bradway .....	102, 759
Mop-wringer and scrubbing-brush .....	L. L. Gordon .....	99, 772
Mortar-mixer .....	S. Wetmore .....	104, 519
Mortar, Process and machinery for making .....	L. B. Pitcher .....	107, 535
Mortising-machine .....	J. Cox .....	99, 064
Mortising-machine .....	M. E. Campfield .....	99, 155
Mortising-machine .....	F. G. Chapman .....	100, 502
Mortising-machine .....	A. Schmackers .....	100, 672
Mortising-machine .....	J. Skipp .....	100, 813
Mortising-machine .....	H. C. Smith .....	105, 603
Mortising-machine .....	G. T. Savary .....	106, 511
Mortising-machine .....	D. S. Shearer .....	107, 413
Mortising-machine .....	L. G. Merrill .....	108, 503
Mortising-machine .....	W. H. Sible .....	110, 079
Mosquito-bar .....	S. Kemper .....	102, 830
Mosquito-bar .....	T. Masac .....	108, 611
Mosquito-net frame, Metallic connections for .....	U. W. Armstrong and I. Keeney .....	104, 245
Mosquito-net holder .....	C. Messenger .....	106, 386
Mosquito-screen frame .....	W. W. Wooley .....	104, 609
Motion, Converting reciprocating into rotary .....	J. F. Hartmann .....	102, 260
Motion, Device for reversing .....	C. F. Hadley .....	100, 395
Motion, Mechanical .....	A. Kloman .....	105, 951
Motion, rotary, Device for transmitting .....	H. J. Hancock .....	105, 937
Motion to machinery, Means for communicating .....	C. H. Miller .....	105, 964
Motive-power apparatus .....	H. Wilkins and W. H. Sangster .....	99, 992
Motive-power apparatus .....	A. Jackson .....	104, 595
Motive-power apparatus .....	L. W. Lathrop .....	108, 915
Motive-power apparatus .....	T. Davis .....	110, 212
Motive-power, Machine for .....	H. Wickham, jr. ....	105, 870
Motive-power to machinery, Mode of applying .....	R. R. Moffatt .....	110, 268
Motor, Electro-magnetic .....	L. T. Lindsey .....	102, 562
Motor, Electro-magnetic .....	L. Finger .....	105, 663
Motor, Electro-magnetic .....	L. T. Lindsey .....	106, 493
Motor, hand, Mechanical .....	H. Fowler .....	107, 474
Motor, hand, Mechanical .....	H. Fowler .....	107, 475
Motor, Hydraulic .....	J. Harris .....	105, 450
Motor, Spring .....	R. Grimm .....	99, 430
Motor, Water .....	W. McGinniss .....	102, 571
Motor, Water-current .....	J. Q. A. Schoonover .....	100, 673
Mounting croquet-boards, Method of .....	H. R. Heyle .....	104, 151
Movement, Electro-magnetic .....	F. L. Pope .....	103, 077
Movement, Mechanical .....	G. M. Rhoades .....	98, 632
Movement, Mechanical .....	J. C. Vanleave .....	99, 611
Movement, Mechanical .....	W. Garrison .....	100, 747
Movement, Mechanical .....	R. B. Hamel and J. B. Holden .....	103, 175
Movement, Mechanical .....	N. Bradford .....	103, 971
Movement, Mechanical .....	W. Hammill .....	104, 451
Movement, Mechanical .....	E. Melton .....	104, 977
Movement, Mechanical .....	D. Zeigler .....	107, 432
Movement, Mechanical .....	A. Eckert .....	108, 340
Movement, Mechanical .....	J. Woolf .....	108, 547
Movement, Mechanical .....	J. H. Whitney .....	109, 163
Movement, Mechanical .....	W. Walker .....	110, 175
Movement, Mechanical .....	J. Woolf .....	110, 185
Movement, Mechanical .....	J. Woolf .....	109, 750
Movement, reciprocating, Pneumatic .....	De V. Wood .....	98, 561
Movement, rotary, Mechanical .....	A. Waterhouse .....	102, 454
Mower and hedge-trimmer, Combined .....	J. O. Taber .....	101, 060
Mower and reaper sickle-sharpener .....	E. Doud .....	105, 184
Mower, Lawn .....	H. W. Harkness .....	98, 550
Mower, Lawn .....	J. C. Field .....	100, 742
Mower, Lawn .....	J. Arbeiter .....	100, 840
Mower, Lawn .....	C. M. Clinton .....	101, 585
Mower, Lawn .....	N. Eaton .....	102, 101
Mower, Lawn .....	T. Coldwell and G. L. Chadborn .....	105, 781
Mower, Lawn .....	W. H. Drake .....	109, 389
Mower, Lawn .....	A. J. Ohmer .....	110, 388
Mower, Lawn .....	H. C. Hart .....	110, 457
Mower, Lawn .....	L. Ross .....	110, 592
Mowing-machine .....	T. H. Witherby .....	101, 333
Mowing-machine .....	J. D. Wilber .....	101, 554
Mowing-machine .....	G. P. Shaw .....	107, 108
Mowing-machine .....	H. F. Shaw .....	107, 296
Mowing-machine .....	B. Illingworth .....	109, 322

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Mowing-machine and hay-tedder, Combined .....	J. H. Dater .....	100, 124
Mowing-machine, Cutting-apparatus for .....	H. F. Shaw .....	104, 364
Mowing-machines, Apparatus for grinding the knives of .....	D. F. Welsh .....	109, 162
Mucilage-holder .....	J. M. Keep .....	100, 640
Mucilage-holder .....	C. C. Converse .....	106, 664
Muff .....	R. M. Seldis .....	104, 780
Muff and porte monnaie, Combined .....	H. Manneck and C. Strohmenger .....	109, 435
Mule for spinning, Self-acting .....	S. D. Paul .....	99, 342
Mule for spinning, Self-acting .....	E. Wright .....	99, 511
Mule for spinning, Self-acting .....	W. Hackley .....	102, 537
Mule for spinning, Self-acting .....	P. J. Kent and N. W. Brancroft .....	105, 812
Mule for spinning, Self-acting .....	J. Entwistle .....	108, 467
Mules for spinning, Self-acting .....	J. Cumnock .....	108, 688
Musical instrument, Reed .....	W. H. Gerrish .....	105, 906
Musical rocking-chair .....	C. Denn .....	106, 790
Music-leaf turner .....	E. B. Robinson .....	105, 726
Music-leaf turner .....	J. W. Mellor .....	107, 519
Music-note blank .....	C. J. and J. Costello .....	104, 833
Music-stand .....	L. V. Brown .....	107, 219
Music-stand .....	C. Lehnert .....	107, 791
Music-stand .....	J. Newton .....	110, 272
Music, Transposing, scale for teaching .....	P. G. Bryan .....	109, 109
Moustache-guard for drinking-vessels .....	E. W. H. Bass .....	100, 586
Moustache-shields for cups .....	G. P. Cutler .....	104, 711
N.		
Nail .....	A. Patterson .....	106, 501
Nail-cutting machine .....	P. Richards .....	100, 447
Nail-extractor .....	G. C. Taft .....	107, 121
Nail-extractor .....	W. G. Ward .....	110, 176
Nail for pictures .....	H. J. Judd .....	104, 163
Nail for pictures, &c .....	T. C. Richards .....	110, 500
Nail-machine .....	H. Scheurle .....	103, 376
Nails and spikes, Machine for finishing .....	T. Wood .....	100, 230
Nails from felt, Process of separating .....	W. Jones .....	106, 171
Nails, Machine for cutting .....	D. J. Farmer .....	108, 895
Nails, Machine for driving .....	S. W. Phelps .....	108, 624
Nails, Machine for making .....	D. J. Farmer .....	103, 730
Nails, Machine for making .....	A. P. Winslow .....	108, 225
Nails, Machine for pointing .....	H. A. Wills .....	109, 987
Nails, steel-headed horseshoe, Manufacture of .....	J. H. Smith .....	104, 785
Nasal-plug, Elastic .....	J. J. Essex .....	107, 238
Navigators' bearing-indicator .....	J. D. Leach .....	102, 281
Neck-tie .....	G. Lane .....	99, 918
Neck-tie .....	J. Bachelder .....	99, 619
Neck-tie .....	M. Altman .....	106, 761
Neck-tie .....	J. G. Hitchcock .....	107, 907
Neck-tie .....	L. A. Grill .....	108, 133
Neck-tie .....	H. P. Wetmore and J. G. Hitchcock .....	108, 309
Neck-tie fastening .....	G. W. Bishop .....	109, 106
Neck-tie, Fastening for .....	W. A. Wicks .....	107, 744
Neck-tie holder .....	W. H. Hart, jr., and E. H. Thayer .....	105, 072
Neck-tie, Paper or paper and cloth .....	R. L. Walter .....	104, 382
Neck-tie retainer .....	H. Lawrence .....	109, 133
Neck-ties, Fastening for .....	J. Bachelder .....	100, 250
Neck-ties, Fastening for .....	P. J. Shirts .....	107, 634
Neck-ties, Fastening for .....	W. J. Cowing .....	110, 439
Neck-ties, Holder for .....	W. H. Hart, jr. .....	102, 259
Neck-ties to collars, Stud for fastening .....	W. E. Simonds .....	103, 093
Neck-tie supporter .....	W. A. Wicks .....	110, 178
Neck-yoke .....	C. S. Sanford .....	99, 243
Neck-yoke .....	J. King and C. S. Gould .....	101, 274
Neck-yoke tug .....	G. Bennett .....	99, 524
Needle .....	J. W. Donaldson and D. Sheets .....	102, 380
Needle .....	H. G. Suplee .....	108, 737
Needle-case .....	W. Avery and A. Fenton .....	98, 904
Needle-case .....	W. B. Field and B. Beach .....	100, 879
Needle-case .....	W. Avery and A. Fenton .....	162, 471
Needle, Plated .....	R. J. Roberts .....	99, 952
Needles and their carrying-arms for sewing-machines .....	C. H. Palmer .....	109, 753
Needle setter and threader .....	R. W. Brown .....	104, 260
Needle-sharpener .....	E. K. Haynes .....	104, 732
Needles, Machine for arranging .....	C. O. Crosby .....	101, 829
Needles, Machine for making .....	C. O. Crosby .....	104, 278
Needles, Machine for manufacturing .....	J. B. Blanchard .....	106, 026
Needles, Machine for papering .....	C. O. Crosby .....	105, 313
Needles, Machine for polishing .....	C. O. Crosby .....	105, 312
Needles, sewing-machine, Machine for polishing the eyes of .....	T. Fowler .....	107, 896
Needles, Machine for scouring the eyes of .....	H. A. Nettleton and E. R. Lawton .....	109, 040



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Needle-threader .....	N. Barnum .....	105, 628
Needle-wrapper .....	A. Shrimpton .....	99, 605
Needle-wrapper .....	V. Milward .....	105, 113
Negative plate for a "Smee" battery .....	L. L. Smith .....	100, 202
Net, Fish .....	P. G. Sabins .....	99, 713
Net, fly, Securing lash in .....	M. Heilman .....	98, 493
Nets, Machine for making .....	B. Arnold .....	98, 461
Netting, Machine for making .....	A. Vivarattus .....	104, 384
Nickel, Electro-deposition of .....	I. Adams, jr. ....	102, 748
Nickel, Electro-plating the metallic parts of cotton-gins with .....	L. Watrous .....	109, 475
Night-latch .....	R. S. Foster .....	99, 676
Nippers, Policeman's .....	G. Lutz, D. H. Rice, M. Trenor, and R. Chadwick .....	102, 563
Nitric acid, Manufacture of .....	H. M. Baker .....	108, 020
Nitro-glycerine, Apparatus for the manufacture of .....	G. M. Mowbray .....	106, 606
Nitro-glycerine, nitro-benzole, &c., Apparatus for the manufacture of .....	G. M. Mowbray .....	106, 607
Noodle-machine .....	D. Obergfell .....	102, 962
Noose-ring for hogs .....	O. P. Goodman .....	99, 559
Note, check, &c., to prevent alteration of .....	C. Folsom .....	110, 129
Nozzle and cap for oil-cans .....	E. T. Covell .....	104, 430
Nozzle and sealing-cap for sheet-metal cans .....	J. A. Bostwick .....	104, 413
Nozzle and stopper for cans .....	M. Bray .....	103, 420
Nozzle, Exhaust .....	A. F. Du Faur .....	107, 603
Nozzle, Exhaust, for steam-engines .....	W. A. Foster .....	107, 605
Nozzle for cans and casks .....	A. L. Webster .....	105, 151
Numbering-machine .....	J. D. Smith .....	107, 202
Nursery foot-stool .....	L. Burnell .....	177, 869
Nursing-bottle .....	E. J. Mallet, jr., and W. S. Ward .....	102, 200
Nursing-bottle .....	J. L. Mason .....	102, 417
Nut-cracker .....	J. Pusey .....	109, 114
Nut-cracker .....	P. Ceredo .....	109, 495
Nut-fastening .....	F. Myers .....	108, 381
Nut-fastening .....	F. Myers .....	108, 382
Nut for screw-bolts .....	N. Thompson .....	99, 729
Nut-lock .....	O. S. Freeland .....	100, 023
Nut-lock .....	C. S. Southwick and D. H. Barker .....	101, 674
Nut-lock .....	T. B. McConaughy and J. Adams .....	103, 220
Nut-lock .....	C. Ditman .....	103, 308
Nut-lock .....	H. Beagle, jr. ....	103, 544
Nut-lock .....	D. Hoffman and W. Johnston .....	104, 033
Nut-lock .....	J. Dennis .....	106, 138
Nut-lock .....	D. Cumming, jr. ....	106, 668
Nut-lock .....	R. Gilliland .....	107, 609
Nut-lock .....	J. Moorcroft .....	107, 704
Nut-lock .....	J. Bell .....	107, 998
Nut-lock .....	S. H. Wheeler .....	108, 223
Nut-lock .....	H. W. McAuley .....	108, 613
Nut-lock .....	M. A. Cushing and O. R. Glover .....	109, 819
Nut-lock plate .....	E. D. Taylor .....	101, 541
Nuts, Machine for making .....	B. H. Bradley .....	105, 033
Nut-tapping machine .....	W. Scully .....	106, 215
O.		
Oar .....	W. J. Hough .....	98, 868
Oar, Jointed .....	C. Dann .....	107, 669
Oat-cleaner .....	S. Dickens .....	110, 122
Obstructions to the flow of oil, Treating oil-wells to remove .....	B. G. Noble .....	105, 590
Oil, Apparatus for drawing and measuring .....	P. Noyes .....	107, 951
Oil-boxes for car-axles .....	T. B. Stewart .....	103, 676
Oil-cabinet .....	M. H. Wiley .....	110, 070
Oil-cabinet .....	M. H. Wiley .....	104, 389
Oil-cake packing-apparatus .....	W. Hawes .....	109, 206
Oil-cans, Apparatus for filling .....	J. A. Bostwick .....	104, 414
Oil-can spout .....	S. Moyle, jr. ....	103, 644
Oil-cloth, Manufacture of .....	W. Berri .....	108, 437
Oil-cloth printing-machine .....	A. Fordyce .....	108, 563
Oil-cloths, &c., Machinery for printing .....	J. Kraft .....	106, 834
Oil, cod-liver, Preparation of .....	M. O. Reilly .....	110, 275
Oil-cups and inkstands, Spring-closing cap for .....	H. H. Heskett .....	101, 032
Oiler for loose pulleys .....	C. A. King .....	104, 322
Oil from cotton-waste, &c., Refining .....	E. T. Jarrold .....	110, 469
Oil from seed, meal, &c., Apparatus for removing .....	E. S. Hutchinson .....	105, 688
Oil, Lubricating .....	D. R. P. Hill .....	110, 361
Oil of vitriol, Concentrating .....	W. H. Balmain .....	102, 205
Oil of vitriol, Mode of storing and transporting .....	W. H. Balmain .....	102, 206
Oil-refineries, Restoring waste alkali used in .....	W. Goodaire and G. Stead .....	101, 003
Oils and fertilizers, Treating fish to obtain .....	A. Smith .....	99, 251

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Oils, Apparatus for treating.....	T. H. Burrige .....	105, 038
Oils, cod liver and castor, Manner of treating .....	G. W. Fox .....	107, 244
Oils, grease, gums, &c., Apparatus for removing, from cotton and woolen waste.....	J. W. Kreeps.....	102, 018
Oils, Instrument for testing .....	P. H. Vander Weyde.....	104, 798
Oils, Method of bleaching and refining .....	O. Loew.....	101, 284
Oils, Purifying and refining .....	W. M. Sloane.....	109, 772
Oil-stone holder .....	H. Brown.....	102, 218
Oils which have been used in lubricating machinery, Purifying.....	C. Houliker.....	110, 364
Oil-wells, Apparatus for cutting the casings or tubes of.....	P. H. Lawrence .....	105, 156
Oil-well reamer .....	J. Rigg, J. E. Hall, and C. F. Fenton....	104, 649
Oil-wells, Casing T's for.....	J. Dickey .....	109, 880
Oil-wells, Torpedo for.....	H. J. Smith .....	107, 201
Oil-wells, Treating, to remove obstructions to the flow of oil.....	B. G. Noble .....	105, 590
Ointment .....	T. Combs .....	102, 224
Ointment for bruises, burns, &c.....	J. T. Mulkey.....	100, 057
Omnibusses, &c., Fare-box for .....	W. H. Young .....	104, 530
One-armed man's assistant.....	G. W. Dalbey .....	103, 023
Opening and shutting railroad-car window. Device for.....	J. F. Lash .....	109, 326
Operating hand-fan, Device for.....	W. A. Ireland .....	107, 501
Ordnance, Breech-loading .....	A. F. Potter .....	103, 078
Ordnance, Counterpoise platform for.....	A. T. Brewer .....	102, 213
Ordnance, Device for sighting and firing .....	G. W. Farrington .....	110, 448
Ore-pulverizer .....	T. C. Morse .....	108, 617
Ores and fertilizers, Machine for washing and screen- ing.....	A. Duvall .....	107, 169
Ores and minerals, Apparatus for washing.....	E. Platt .....	107, 957
Ores and other materials, Apparatus for roasting and drying.....	A. Duvall .....	107, 600
Ores and other materials of different specific gravities, Machine for separating and concentrating.....	R. George .....	106, 048
Ores and other mineral substances, Machine for wash- ing.....	J. B. Platt .....	107, 958
Ores, Apparatus for disintegrating.....	A. B. Paul.....	101, 500
Ores, Apparatus for separating and concentrating.....	R. George .....	106, 049
Ores, Desulphurizing.....	J. F. Osgood.....	101, 654
Ores of lead and zinc for the manufacture of pigments, &c., Treating.....	E. O. Bartlett.....	108, 433
Ore-separator .....	W. Hooper .....	101, 132
Ore-separator .....	T. Bates .....	102, 476
Ore-separator .....	G. Copeland.....	103, 574
Ore-separator .....	H. Ball .....	103, 825
Ore-separator .....	D. Nevin .....	105, 480
Ores, Furnace for desulphurizing .....	J. G. Trotter .....	109, 559
Ores, Process for the treatment of.....	C. M. T. Du Motay .....	103, 434
Ores, Roasting-furnaces for .....	J. Collom .....	106, 553
Ore-washer .....	H. Bradford.....	103, 962
Ore-washing machine .....	N. H. Lebby .....	101, 890
Organ.....	H. N. Goodman .....	103, 448
Organ.....	C. H. Duvie and W. Jackson .....	103, 723
Organ-bellows.....	J. R. Perry .....	104, 060
Organ-bellows.....	J. R. Perry .....	106, 275
Organ, Church.....	W. Jackson .....	102, 822
Organ, melodeon, &c .....	H. A. Clarke .....	105, 780
Organ or melodeon action .....	J. C. Briggs .....	100, 009
Organ, Parlor.....	E. Hamlin .....	106, 692
Organs, &c., Blowing-apparatus for.....	M. J. Kerigan .....	99, 322
Organs, &c., stop-action for .....	H. A. Clifford .....	105, 909
Organ-stops .....	A. K. Hebard .....	105, 571
Organs, Transposing mechanism for.....	W. G. Day .....	107, 342
Organs, Tremolo for .....	J. R. Lomas .....	100, 048
Organ-tremulants .....	T. P. Sanborn .....	107, 549
Organ, Valve for pneumatic draw in.....	A. Stein .....	106, 884
Ornamenting, Design-die for .....	B. F. Culley .....	105, 637
Ornamenting the surface of wood, &c., Machine for.....	T. T. Ponsonby .....	107, 718
Ornaments to chain-links, Machine for attaching.....	V. Draper .....	105, 054
Outrigger for row-boat.....	A. J. Luffbarry.....	107, 392
Oval-turning tool.....	J. L. Warren.....	101, 329
Oven.....	A. Crumbie .....	99, 645
Oven.....	D. Moore.....	99, 694
Oven.....	McC. Dunn .....	101, 357
Oven.....	C. Swain .....	102, 614
Oven.....	H. Ball .....	105, 541
Oven.....	D. J. George .....	106, 352
Oven.....	J. Rainey .....	103, 389
Oven, Bake .....	A. A. and J. A. Aull .....	108, 086
Oven, Bake .....	J. Hall .....	108, 258
Oven, Bakers'.....	T. P. Mahon.....	102, 415

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Oven, Bakers'.....	J. and C. L. Vale .....	104, 083
Oven, Bakers'.....	J. Rayney .....	108, 517
Oven, Coko .....	L. Schaul .....	103, 507
Oven, Coke .....	A. Beckwith .....	105, 413
Oven, Desulphurizing .....	J. C. Brewster .....	99, 143
Oven, Enameling .....	V. Keller .....	98, 777
Oven, Hot-blast .....	J. Froggett .....	103, 597
Oven, Hot-blast .....	A. A. Player, and H. McAllister, jr. ....	103, 651
Oven or stove for heating the blast of blast-furnaces. ....	J. M. Hartman .....	105, 678
Oven, Rotary bake .....	J. Vale .....	107, 984
Ovens or furnaces, Hot-blast .....	E. M. Ferguson .....	101, 449
Overshoe .....	W. W. Swann .....	103, 522
Ox-bow .....	A. L. D. Moore .....	103, 355
Oxide of zinc, Apparatus for cooling the oxide of .....	J. E. Burrows .....	108, 965
Ox-shoes, Maching for making .....	A. L. Wooding .....	103, 954
Ox-yoke .....	J. D. Foster .....	105, 325
Oyster-dredge winder .....	C. T. Belbin .....	109, 104
Ozone, Apparatus for the manufacture of .....	C. F. Dunderdale .....	109, 601
Ozone, Apparatus for the production of .....	C. F. Dunderdale .....	100, 736
Ozone or ozonized air, Process of obtaining .....	O. Loew .....	107, 071
P.		
Package band and fastener .....	F. R. Hunt .....	100, 897
Package for lard, butter, &c .....	G. M. Huntley .....	109, 739
Package for tea and coffee .....	H. Ouenkirchen .....	106, 952
Packages, Strap-fastening for .....	J. C. Carey .....	102, 370
Packing .....	L. Katzenstein .....	105, 416
Packing and bearings, Material for .....	E. D. Murfey .....	108, 286
Packing and transporting eggs, Device for .....	B. Illingworth .....	100, 633
Packing-apparatus .....	C. E. Haynes .....	100, 889
Packing, belting, and hose, India-rubber manufac- ture of .....	J. Murphy .....	101, 905
Packing-box for rotary steam-cylinders .....	S. Deacon and J. Russell .....	109, 722
Packing-case for saws .....	H. Disston .....	102, 923
Packing for piston-rods .....	C. Thayer and D. McPherson .....	100, 213
Packing for rotary-engine .....	J. Loader .....	103, 901
Packing for stationary joints, Metallic .....	H. T. Lee .....	102, 282
Packing for steam-engines, pumps, &c. ....	W. Beschke .....	99, 627
Packing journals and other parts of machinery .....	C. A. Stevens .....	101, 394
Packing, Piston .....	J. Keesev .....	107, 062
Packing, Steam .....	W. Brown .....	105, 036
Packing, Tobacco-box .....	W. Cills .....	105, 428
Pad, Blotting .....	J. M. Keep .....	101, 627
Pad, Blotting .....	A. B. Kellogg .....	110, 245
Pad for corsets .....	M. P. R. Tilton .....	110, 310
Pad for horses' feet .....	J. Johnson .....	104, 960
Pad, Harness .....	G. W. Graves .....	107, 361
Pad, Horse-collar .....	J. S. Huston .....	102, 403
Pad, Horse-collar .....	J. Fraser .....	108, 995
Pad, Horse-collar .....	J. F. Walsh .....	110, 518
Padlock .....	F. W. Smith, jr. ....	99, 115
Padlock .....	F. W. Smith, jr. ....	99, 116
Padlock .....	L. Hillebrand .....	100, 402
Padlock .....	L. Hillebrand .....	100, 403
Padlock .....	T. Lanston .....	100, 644
Padlock .....	D. Snell .....	101, 391
Padlock .....	C. T. Gibson .....	101, 607
Padlock .....	A. M. Adams .....	101, 803
Padlock .....	H. S. Shepardson .....	102, 440
Padlock .....	J. M. A. Dew .....	102, 661
Padlock .....	H. F. Haack .....	102, 810
Padlock .....	E. P. Hall .....	103, 043
Padlock .....	E. L. Gaylord .....	104, 572
Padlock .....	D. K. Miller .....	105, 710
Padlock .....	J. Ingels .....	105, 691
Padlock .....	W. McIntyre .....	100, 922
Padlock .....	J. Corbett .....	109, 717
Padlock, Combination .....	G. K. Farrington .....	99, 872
Padlock, Combination .....	G. Thompson .....	102, 620
Padlock, Combination and register .....	H. S. Shepardson .....	107, 414
Pail, Butter .....	H. P. Westcott .....	107, 139
Pail, Chamber .....	G. A. Higgins .....	99, 437
Pail-ear .....	J. A. Otis .....	101, 488
Pail, Cream .....	G. A. Nash .....	107, 919
Pail, Milk .....	C. Tabor .....	107, 834
Pail, Paint .....	C. R. Otis .....	102, 308
Pails, cans, &c., Fastening for .....	J. K. Chase .....	101, 430
Pails, Arkins, &c., Cover for .....	T. F. Conklin .....	101, 933
Pail, Tin .....	H. Sangsters .....	101, 516
Pail, Wooden .....	L. A. Fleming .....	98, 578

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Paint.....	T. H. Currey.....	99, 856
Paint and pigment.....	S. W. Isham.....	101, 880
Paint and varnish, Manufacture of.....	G. F. Cornelius.....	106, 784
Paint, bronze, Composition for.....	A. Touné.....	104, 665
Paint, cement, &c., Compound for.....	C. W. Westover.....	101, 687
Paint, Combination of ochres for.....	D. S. Wood.....	106, 643
Paint, Composition for.....	R. Love.....	99, 332
Paint-compound.....	W. N. Jordan.....	107, 059
Paint for marbleizing wood.....	F. G. Pokorny.....	105, 596
Paint for roofs.....	T. C. Rice.....	104, 648
Paint for ships' bottoms.....	T. D. Teal.....	99, 497
Paint for ships' bottoms, &c.....	J. Bowker.....	103, 290
Painting, Apparatus for.....	A. P. Merritt.....	103, 640
Paint, Manufacture of.....	T. C. Rice.....	109, 757
Paint, Mineral.....	C. B. Heckell.....	102, 118
Paint, Mineral.....	J. S. Kenyon and L. Fox.....	108, 914
Paint or coating for ships' bottoms.....	L. A. Messinger.....	101, 899
Paints, Compound for manufacture of.....	A. H. Bourne.....	105, 634
Paints, Manufacture of.....	F. W. Gerdes.....	110, 027
Paint, soap, and other materials, Machinery for mixing.....	J. Staiuthrop and I. Cole.....	102, 330
Pan, ash, Locomotive.....	H. A. Stoddard.....	107, 117
Pan, Baking.....	A. Heminway and W. A. Daggett.....	102, 938
Pan, Biscuit.....	J. C. Milligan.....	101, 490
Pan, bowl, box, and dish, Paper.....	J. W. Jarboe.....	99, 200
Pan, Bread.....	W. A. Daggett.....	109, 497
Pan, Bread.....	W. H. Daggett.....	109, 875
Pan, Cake.....	H. Smith.....	105, 991
Pan, Cake.....	H. Smith.....	105, 992
Pan, Dripping.....	A. Reid.....	106, 506
Paneling-machine.....	D. F. Walker.....	106, 097
Paneling machine.....	N. Jenkins.....	108, 027
Pan, Gravel.....	H. Franke.....	100, 745
Pan, Milk.....	N. C. Burnap.....	99, 150
Panoramas, Electro-magnetic apparatus for moving.....	L. Finger.....	105, 664
Pantaloons.....	T. E. Sloan.....	105, 856
Paper, albumenized, Apparatus for the manufacture of.....	J. Klein.....	105, 464
Paper and other fabrics, Compound for coloring.....	F. Beck.....	107, 997
Paper and other fabrics, Machine for drying.....	F. Beck.....	110, 540
Paper, Apparatus for cleaning and preparing rags for the manufacture of.....	W. E. Newton.....	102, 854
Paper, Apparatus for separating wood-fiber for.....	A. Fickett.....	102, 239
Paper bag.....	A. Adams.....	105, 877
Paper-bag machine.....	H. Law.....	104, 169
Paper-bag machine.....	K. Lorton and J. S. Davison.....	105, 099
Paper-bag machine.....	C. F. Annan.....	110, 536
Paper-binder, Temporary.....	F. M. Smith.....	107, 968
Paper box.....	B. Osborn.....	100, 658
Paper box.....	C. O. Crosby.....	100, 865
Paper box.....	J. Root.....	100, 806
Paper box.....	J. W. Tuttle.....	101, 546
Paper box.....	J. Root.....	103, 932
Paper boxes, Machinery for making.....	C. O. Crosby.....	101, 354
Paper boxes, Machinery for making.....	F. Gates.....	101, 455
Paper-box machine.....	D. Simmons, jr.....	100, 198
Paper-box machine.....	D. Simmons.....	100, 459
Paper-box machine.....	C. B. Hatfield.....	100, 621
Paper-box machine.....	C. A. Maxfield.....	104, 477
Paper cap.....	P. S. White.....	109, 566
Paper, Cleansing, when reduced to pulp.....	S. W. Wilder.....	99, 735
Paper-clip.....	G. W. Emerson.....	98, 479
Paper-clips, Suspension.....	W. Stokes.....	105, 274
Paper, cloth, &c., Coating and ornamenting the surface of.....	F. Beck.....	109, 486
Paper, Coloring and drying.....	C. C. Fitzgerald.....	104, 066
Paper collars, Machine for making.....	C. E. Moore and M. L. Wyman.....	107, 399
Paper-cutting machine.....	C. Montague.....	98, 611
Paper-cutting machine.....	H. A. Gage.....	100, 391
Paper-cutting machine.....	F. B. Sweetland.....	100, 465
Paper-cutting machine.....	A. W. Currier.....	100, 506
Paper-cutting machine.....	A. Hardy.....	101, 873
Paper-cutting machine.....	J. Bole.....	105, 894
Paper-cutting machine.....	St. C. Denny.....	103, 891
Paper-cutting machine.....	I. L. G. Rice.....	109, 249
Paper-cutting machine, Rotary.....	R. Vose.....	100, 367
Paper-feeder.....	O. Norelius.....	100, 059
Paper-feeding apparatus.....	J. T. Ashley.....	107, 320
Paper-feeding apparatus.....	J. T. Ashley.....	107, 851
Paper-feeding machine.....	M. E. Knight.....	109, 224
Paper-file.....	A. Hockett.....	101, 130
Paper-file.....	G. W. Emerson.....	102, 237

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Paper-file .....	E. J. Crane.....	102, 918
Paper-file .....	T. C. Falmestock.....	104, 002
Paper-file .....	A. Day.....	104, 122
Paper-file .....	J. P. Quarles.....	104, 153
Paper-file .....	W. Boyrer.....	104, 415
Paper-file .....	T. E. Moore.....	105, 114
Paper-file .....	F. C. Senseman.....	105, 987
Paper-file .....	J. and J. Cash, jr.....	106, 778
Paper-file .....	C. Tabor.....	107, 836
Paper-file .....	S. E. Pettee and C. A. Wollo.....	108, 623
Paper-file .....	W. L. Woods.....	108, 746
Paper-file .....	F. W. Whitney.....	109, 085
Paper-file .....	W. W. Russell.....	109, 253
Paper for bonds, drafts, checks, &c.....	R. Price.....	105, 125
Paper for checks, drafts, notes, &c.....	G. F. Thomas.....	101, 786
Paper for printing, writing, and other purposes.....	J. Langtree.....	107, 067
Paper-folder .....	E. Palmer.....	102, 334
Paper-folding machine .....	W. Mendham.....	99, 336
Paper-folding machine .....	W. Mendham.....	104, 621
Paper-folding machine .....	C. Chambers, jr.....	105, 424
Paper-hangers' apparatus .....	W. F. Trautman.....	103, 393
Paper-hangings, Machine for coloring.....	J. Heist.....	101, 732
Papering-machine .....	G. M. Lane.....	107, 388
Paper-machine .....	P. Scanlan.....	109, 552
Paper-machine, Crimping-attachment to .....	W. H. Bleasdale.....	102, 754
Paper, Machine for cutting, printing, and folding.....	W. P. Corsa.....	103, 575
Paper, Machinery for calendering and polishing.....	P. Coburn.....	103, 569
Paper-making machinery .....	W. W. Harding.....	100, 755
Paper, Manufacture of .....	E. B. Bingham.....	100, 109
Paper, Manufacture of .....	I. Hoffman.....	102, 265
Paper, Manufacture of .....	L. Dodge.....	104, 281
Paper, Manufacture of .....	L. Dodge.....	104, 282
Paper, Manufacture of .....	H. Pemberton.....	105, 594
Paper, Manufacture of .....	H. Pemberton.....	108, 177
Paper, Manufacture of .....	C. E. O'Hara.....	108, 509
Paper, Manufacture of .....	J. S. Keuon and L. Fox.....	108, 913
Paper, Manufacture of .....	C. B. Hutchins.....	109, 621
Paper, photographic, Frame for sensitizing.....	L. V. Moulton.....	105, 233
Paper, Preparation of straw for the manufacture of.....	L. Dean.....	109, 596
Paper, Process and apparatus for the manufacture of.....	G. E. Marshall.....	105, 585
Paper-pulp, &c., Disintegrating fibrous material for.....	A. H. F. Deiningner.....	108, 241
Paper-pulp from wood, Manufacture of .....	H. B. Meech.....	106, 710
Paper-pulp, Disintegrating wood for .....	H. Dodge.....	99, 071
Paper-pulp, Manufacture of .....	A. K. Eaton.....	106, 143
Paper-pulp, Manufacture of .....	C. B. Sawyer.....	109, 766
Paper-pulp, Preparing for packing and transportation.....	W. H. Merrick.....	105, 354
Paper-ruling machine.....	W. O. Hickok.....	104, 152
Paper-stock .....	M. L. Keen.....	109, 742
Paper-stock, Apparatus for bleaching.....	F. Sheldon.....	104, 781
Paper-stock, Manufacture of .....	M. L. Keen.....	108, 487
Paper-stock, Preparation of .....	H. M. Baker.....	105, 884
Paper-stock, Process of bleaching and pulping.....	J. W. Goodwin.....	100, 523
Paper-stock, Reducing and bleaching.....	H. B. Meech.....	106, 711
Paper-trimming machine.....	J. F. Schuyler.....	109, 767
Parasol .....	L. Battles.....	103, 412
Parasols, Mechanism for retaining, adjusting, and sewing.....	W. J. Tate.....	105, 862
Parchment or water-proof paper, Apparatus for preparing.....	E. P. Hudson.....	107, 686
Parchment-paper, Manufacture of .....	A. J. Sheldon.....	99, 248
Parchment-paper, rubber-coated, Manufacture of .....	E. P. Hudson.....	107, 687
Paraffine and other hydrocarbon oils, Apparatus for burning.....	H. H. Doty.....	109, 303
Paraffine and paraffine oil, Manufacture of .....	H. W. C. Tweddle.....	99, 975
Paraffine, Treating and obtaining it in crystals .....	F. Lambo.....	102, 135
Parer, Fruit and vegetable.....	H. Soggs.....	110, 167
Parlor-croquet, Apparatus for.....	A. P. Eastman.....	109, 120
Parlor-fountain for diffusing liquids.....	W. Altie.....	100, 349
Passenger-register for vehicles, Automatic.....	C. Ottinger.....	106, 610
Pasteboard, Adhesive compound for preparing.....	G. L. Jaeger.....	105, 084
Pasteboard, Machine for lining and drying.....	G. L. Jaeger.....	102, 942
Paste for bookbinders and others, Material for.....	I. S. Plumer.....	106, 617
Paste for polishing metals.....	P. McManus and G. W. Latimer.....	103, 909
Paste, Manufacture of .....	G. G. Noah.....	104, 190
Pattern for casting.....	A. L. Finch.....	102, 384
Pattern for castings.....	J. L. Jackson.....	103, 888
Pattern for measuring and laying out garments.....	F. Wetmore.....	110, 097
Pattern for molding stove-plates.....	R. W. Belson.....	103, 966
Pattern for shoes.....	E. Shoppell.....	101, 528
Patterns for stitching on leather, Method of laying off.....	W. P. Wollington.....	100, 579
Pavement.....	A. B. McKeon.....	102, 846



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Pavement.....	A. Van Camp and M. M. Hodgman .....	103, 105
Pavement.....	A. Dilger .....	104, 941
Pavement.....	A. Stevens and L. A. Cauvet .....	105, 138
Pavement.....	J. S. Kelley .....	106, 832
Pavement.....	L. S. Filbert .....	108, 696
Pavement, &c., Concrete for .....	G. H. S. Duffus .....	108, 693
Pavement, Asphalt .....	C. P. Alsing .....	98, 460
Pavement, Asphalt .....	A. C. Campbell .....	108, 566
Pavement, Asphalt .....	E. J. De Smedt .....	109, 597
Pavement, Asphaltum or concrete .....	A. G. Day .....	104, 562
Pavement, Bituminous rock .....	J. S. Fulton and J. Brace .....	103, 168
Pavement, Cast-iron .....	A. Farrar .....	98, 480
Pavement, Combined wood and concrete .....	J. W. Brown .....	104, 551
Pavement, Composition for .....	J. R. Hayes .....	107, 489
Pavement, Concrete .....	N. H. Downs .....	102, 097
Pavement, Concrete .....	G. Leverich and A. H. Emery .....	104, 325
Pavement, Concrete .....	R. Skinner and B. Bonnet .....	105, 502
Pavement, Concrete .....	J. J. Shillinger .....	105, 599
Pavement, Concrete .....	A. B. McKeon .....	109, 333
Pavement, Concrete and wooden .....	W. B. Coates .....	100, 727
Pavement, concrete, Composition for .....	E. W. Ranny .....	98, 522
Pavement, Metallic .....	S. D. Tillman .....	104, 513
Pavement, metallic, Corrugated .....	G. Wilkes .....	107, 988
Pavement, Preparation of composition for .....	J. R. Hayes .....	107, 490
Pavements, &c., Treating bituminous substances for .....	J. O. Friel .....	106, 717
Pavements, &c., Compound for making concrete .....	H. M. Conklin .....	100, 730
Pavements, Foundation for .....	S. Reeve .....	110, 395
Pavements, roads, &c., Manufacture of asphaltic composition for .....	A. Ruttkay .....	107, 815
Pavement, Stone.....	C. G. Waterbury .....	102, 629
Pavement, Street .....	E. M. Fowler .....	100, 134
Pavement, Street .....	D. C. Colby .....	101, 100
Pavement, Street .....	W. H. Williams .....	101, 691
Pavement, Street .....	J. C. Blake .....	102, 361
Pavement, Street .....	A. Dilger .....	104, 942
Pavement, street, Wooden .....	C. G. Waterbury .....	102, 991
Pavements, walks, &c., concrete, Composition for .....	A. Van Camp and M. M. Hodgman .....	100, 594
Pavements, walks, roofs, &c., Cement for .....	G. H. Smith .....	103, 095
Pavements, wood and other, Ramming-machine for .....	A. L. Lansing .....	109, 745
Pavement, Wood .....	W. W. Ballard .....	99, 391
Pavement, Wood .....	L. H. Boole .....	100, 363
Pavement, Wood .....	A. W. Platt .....	100, 554
Pavement, Wood .....	S. H. Ingersoll .....	101, 270
Pavement, Wood .....	A. Betteley .....	101, 346
Pavement, Wood .....	T. Cowing .....	101, 590
Pavement, Wood .....	J. H. Wilkinson .....	101, 955
Pavement, Wood .....	H. Haupt .....	103, 328
Pavement, Wood .....	J. W. Brocklebank and G. W. Tubbs .....	103, 713
Pavement, Wood .....	L. A. Cauvet .....	103, 979
Pavement, Wood .....	J. J. Schroyer .....	104, 778
Pavement, Wood .....	W. W. Ballard .....	105, 292
Pavement, Wood .....	H. Dowson .....	105, 658
Pavement, Wood .....	D. McKenzie .....	105, 707
Pavement, Wood .....	A. M. Adams .....	106, 447
Pavement, Wood .....	H. J. Alvord .....	106, 910
Pavement, Wood .....	A. Betteley .....	106, 989
Pavement, Wood .....	A. Betteley .....	107, 152
Pavement, Wood .....	M. Fitzgibbons .....	107, 352
Pavement, Wood .....	A. W. Platt .....	108, 181
Pavement, Wood .....	C. Gaytes .....	108, 582
Pavement, Wood .....	L. T. Follansbee .....	108, 697
Pavement, Wood .....	D. McKenzie .....	109, 139
Pavement, Wood .....	W. S. Morse .....	110, 153
Pavement, Wooden .....	J. K. Thompson .....	100, 339
Pavement, Wooden .....	S. Kneass .....	102, 277
Pavement, Wooden .....	G. A. Beidler .....	106, 651
Pavement, Wooden-block .....	A. Treanunay .....	102, 884
Paving-block, Concrete .....	R. Norwood .....	98, 791
Paving-blocks, Device for keying .....	P. D. Cummings .....	108, 977
Peanut cleaning and polishing machine .....	J. M. Keating .....	103, 639
Pearl-button blanks, Machine for grinding .....	J. D. Hall .....	99, 183
Peat-auger .....	A. N. N. Aubin .....	99, 129
Peat, Expelling volatile matters from .....	T. G. Walker .....	108, 853
Peat, Floor for drying .....	J. B. Lyons .....	100, 301
Peat-machine .....	J. B. Lyons .....	100, 302
Peat-machine .....	C. Luxton .....	101, 478
Peat-machine .....	J. B. Lyons .....	102, 414
Peat-machine .....	A. N. N. Aubin .....	105, 881
Peat-molding machine .....	A. N. N. Aubin .....	99, 130
Peat, Preparation of .....	E. L. Holmes .....	109, 009
Peg-box for pegging-machine .....	A. W. Moore .....	108, 719

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Pegging-machine .....	C. Varney .....	104, 668
Pegs for boots and shoes, Wiro for making .....	D. H. Campbell and E. Woodward .....	110, 431
Pen .....	D. D. Foley .....	98, 945
Pen .....	E. P. Tiffany .....	100, 340
Pen .....	G. Crandell .....	108, 455
Pen .....	G. W. Wooley .....	110, 186
Pen .....	R. H. Chinn .....	110, 342
Pencil .....	F. Rowell and E. C. Loud .....	99, 955
Pencil-attachment for compass .....	C. Shott .....	105, 376
Pencil-blanks, lead, Machine for grooving .....	P. Hufeland .....	103, 746
Pencil-case .....	W. N. Bartholomew .....	101, 344
Pencil-case .....	C. H. Downes .....	107, 672
Pencil-holder .....	A. J. Hall .....	101, 457
Pencil-holder .....	C. A. Eaton .....	108, 573
Pencils, &c., Machine for varnishing .....	A. Warth, P. Hufeland, and G. Braun .....	102, 893
Pencils, Composition for .....	W. Geller .....	103, 000
Pencil-sharpener .....	J. McClure .....	99, 335
Pencil-sharpener .....	H. Burgess .....	102, 766
Pencil-sharpener .....	M. W. Dillingham .....	105, 440
Pencil-sharpener .....	M. W. Dillingham .....	106, 795
Pencil-sharpener .....	A. G. Batchelder .....	109, 100
Pencils, lead, Machine for cutting off .....	P. Schrag and P. Hufeland .....	103, 241
Pencils, Machine for cutting and smoothing the ends of .....	T. M. Muller and H. C. Benson .....	108, 721
Pencils, Machine for varnishing .....	T. H. Muller and H. C. Benson .....	109, 750
Pen for ruling-machines .....	W. O. Hickok .....	107, 046
Pen, Fountain .....	G. A. Becker .....	99, 134
Pen, Fountain .....	R. H. Chinn .....	99, 635
Pen, Fountain .....	T. W. Grinter .....	103, 737
Pen, Fountain .....	G. A. Becker .....	106, 987
Pen, Fountain .....	F. C. Cone .....	108, 110
Pen, Fountain .....	F. Schifferle .....	109, 257
Pen-holder .....	R. B. Lawrence .....	106, 596
Pen-holder .....	R. B. Lawrence .....	108, 916
Penman's hand-support .....	D. A. Sanborn .....	105, 001
Penman's wrist-supporter .....	H. F. Cristy .....	103, 991
Pens, Fountain .....	A. S. Carleton .....	104, 109
Pepper-sauce .....	E. McIlhenny .....	107, 701
Pendulum, Balance for clock .....	R. Ramsdell and G. A. Whitcomb .....	108, 390
Perch-spring clip .....	J. Deeble .....	101, 834
Percolator for druggists and others .....	A. Merrill .....	104, 181
Percolator, Reversible .....	S. Woolston and W. Corfield .....	100, 232
Percussion-fuse .....	W. Gardner .....	103, 599
Perfume-ejector .....	C. I. Fehrensens .....	101, 848
Perfumery .....	G. Smith .....	109, 773
Perfumery, &c., Packing-case for .....	T. P. Spence .....	105, 269
Perfumes and volatile liquids, Device for neutralizing .....	E. P. Rouche .....	103, 374
Pessary .....	E. F. Hoffman .....	98, 769
Pessary .....	C. Schmitt .....	101, 317
Pessary .....	W. R. Gardner .....	105, 191
Petroleum and other hydrocarbon liquids, Apparatus for the combustion of .....	H. Taylor .....	102, 619
Petroleum and other hydrocarbon oils, Burning .....	L. E. Truesdell .....	101, 964
Petroleum and other oils, Still for .....	S. Van Syckel .....	110, 516
Petroleum, Manufacture of gas from .....	L. Stevens .....	100, 208
Petroleum, Manufacture of oils from .....	C. Toppan .....	99, 500
Petroleum, Process of treating .....	J. A. Patro .....	99, 728
Petroleum, Refining .....	J. A. Patro .....	106, 233
Pew-shelf .....	D. Buchanan .....	110, 197
Phosphates, Apparatus for drying .....	E. Frank and J. B. Adt .....	106, 147
Phosphate, vitriolized, Treating .....	A. Duvall .....	105, 319
Photographic background .....	D. W. Van Riper .....	107, 129
Photographic plate-dipper .....	D. H. Cross .....	100, 866
Photographic plate-holder .....	J. W. Moore .....	104, 054
Photographic printing-frame .....	P. Murphy .....	99, 462
Photographic purposes, Composition for .....	T. Cummings .....	104, 937
Photographic show-case .....	J. F. Adams .....	100, 962
Photographs, Coloring .....	R. Winter .....	104, 241
Photographs, Tablet-locket for .....	G. W. Pitcher .....	105, 721
Photo-lithographic transfers, Mode of producing .....	I. Rehn .....	100, 924
Piano .....	C. Kurtzmann .....	103, 345
Piano .....	C. Hattersley .....	103, 456
Piano .....	C. F. Oliver .....	104, 341
Piano .....	S. W. Parker .....	106, 612
Piano .....	C. F. Chow .....	106, 661
Piano .....	O. Bull .....	109, 172
Piano-action .....	C. F. Oliver .....	106, 396
Piano-action .....	F. B. McGregor .....	109, 921
Piano, Coupling-attachment for .....	J. Clark .....	108, 635
Piano-forte .....	G. Ely .....	102, 668
Piano-forte .....	W. Bourne .....	104, 256
Piano-forte .....	L. Farnsworth .....	106, 145

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Piano-forte action.....	W. G. Day.....	110, 120
Piano-forte, Damper for.....	A. H. Hastings.....	100, 888
Piano-fortes, Stringing and tuning.....	W. J. and J. H. Richards and F. M. Sofge.....	99, 708
Piano-fortes, Supplemental pedal-attachment for.....	G. A. Scott and W. B. Frisbee.....	105, 002
Piano-fortes, upright, Damper-action for.....	G. W. Neill.....	100, 550
Piano, Grand.....	G. H. Davis.....	100, 266
Pianos.....	A. F. Dessau.....	99, 655
Pianos, &c., Lock for.....	H. Ahrend.....	107, 585
Pianos, Iron frame for.....	G. Steck.....	106, 227
Pianos, upright, Iron frame for.....	G. Steck.....	100, 948
Pick, Digging and tamping.....	C. Carroll.....	103, 014
Picker-collar.....	J. M. Gotham.....	107, 772
Picker for looms.....	J. Hunt and A. Stockwell.....	101, 734
Picker for wool.....	S. R. Parkhurst.....	98, 704
Picker to picker-staff, Device for attaching.....	J. D. Barrie.....	102, 475
Pick-handle.....	F. Bellinger.....	101, 214
Picture-cord.....	T. Kohn.....	101, 629
Picture-envelope.....	R. Price.....	100, 067
Picture-frame.....	J. Sperry.....	99, 022
Picture-frame fastening.....	J. D. Crocker.....	99, 854
Picture-frames, &c., Device for hanging.....	J. N. Gillispie.....	102, 805
Picture-hanger.....	G. Lamb.....	103, 627
Picture-nail.....	J. H. Squier and E. J. Warner.....	101, 781
Picture-nails, Construction of ornamental-headed.....	T. C. Richards.....	110, 287
Picture-poise.....	J. J. Glover.....	103, 445
Pictures, &c., Nail for.....	T. C. Richards.....	110, 500
Pictures, Device for hanging.....	C. W. Simpson.....	102, 167
Pictures, photographic, Device for exhibiting.....	A. G. Walton.....	109, 472
Pier for bridges.....	C. H. Lilienthal.....	109, 637
Pie stamper and cutter.....	A. Hawkes.....	102, 117
Pigment for distemper-painting.....	H. M. Johnston.....	99, 907
Pigments, &c., Treating the ores of lead and zinc for the manufacture of.....	E. O. Bartlett.....	108, 433
Pile and post driver.....	N. Havermale.....	110, 359
Pile-driver.....	T. Shaw.....	104, 215
Pile-driver.....	J. Huy.....	109, 623
Pile for armor-plates.....	J. Jeavons.....	110, 143
Pile for beams.....	J. Stokes.....	109, 850
Pile for corrugated beams.....	R. Montgomery.....	108, 165
Pile for engineering purposes.....	T. W. H. Moseley.....	108, 814
Piles, pneumatic, Apparatus for sinking.....	T. E. Sickles.....	99, 359
Piles, pneumatic, Apparatus for sinking.....	T. E. Sickles.....	99, 360
Pillow, Adjustable.....	H. Eilers.....	108, 122
Pincers, Cutting.....	P. Broadbrooks.....	99, 057
Pincers, Double.....	W. L. Maund.....	101, 371
Pincers, Shoemakers'.....	T. Pilote.....	98, 796
Pincushion.....	M. Ormsbee.....	109, 044
Pin, Dental.....	P. Crans, jr., and R. McKinley.....	104, 835
Pine-wood, Distilling.....	T. W. Wheeler.....	105, 019
Pin for artificial teeth.....	H. M. Raynor.....	99, 593
Pin, Hair-curling.....	A. Vogel and F. Krebs.....	102, 338
Pinion.....	V. W. Blanchard.....	102, 363
Pins, Papering.....	C. O. Crosby.....	98, 745
Pintle or pins in butt-hinges, Device for inserting.....	L. P. Summers.....	105, 513
Pipe and tube for water and gas.....	H. M. Stow.....	110, 399
Pipe, Apparatus for molding.....	F. Fuller.....	101, 853
Pipe-boring machine.....	T. W. Purcell.....	106, 077
Pipe-cleansing apparatus.....	J. Van Slooten, C. S. Hunt, and W. McCulloch.....	105, 015
Pipe, Core-bar for casting.....	J. Enright.....	104, 397
Pipe-coupling for heating and ventilating.....	F. R. Hunt.....	100, 896
Pipe, Device for casting and molding.....	J. McClelland.....	104, 479
Pipe, Drain.....	G. Richardson.....	107, 103
Pipe, Drain and water.....	G. H. Titcomb and J. P. Culver.....	102, 623
Pipe for transmitting pneumatic currents for motive-power.....	R. Spear.....	103, 252
Pipe-joint.....	R. B. Coar.....	100, 726
Pipe-joint.....	R. B. Coar.....	103, 567
Pipe-joint.....	H. Smith.....	105, 268
Pipe-joints, Apparatus for sealing.....	W. Cassidy.....	101, 708
Pipe-joints, lead, Connection for.....	I. Smith.....	102, 443
Pipe, Machine for cleaning cast-iron.....	W. Smith.....	104, 072
Pipe, Molding.....	W. Smith.....	103, 647
Pipes, cast, Machine for cleaning.....	H. Davies.....	103, 305
Pipe, Smoking.....	E. Cottam.....	105, 369
Pipe, Smoking.....	C. F. Hitzelberger.....	107, 495
Pipes of malleable metal, Connection for.....	W. H. Harrison.....	98, 961
Pipes, Steam-heating.....	W. Mendham.....	101, 488
Pipes, tiles, sidewalks, &c., Compound for.....	W. A. Battersby.....	103, 957
Pipes, Union-coupling for.....	R. M. Potter.....	100, 665
Pipes, water Flexible joints for.....	M. C. Duffey.....	99, 172

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Pipes, water, gas, and drain, Composition for the manufacture of.	W. P. Kirkland	99, 324
Pipe, Tobacco	J. H. Anthony	105, 408
Pipe, Water	J. F. Ward	107, 838
Pistol, Breech-loading	S. M. Perry and E. Goddard	102, 429
Pistol, fire-cracker, Revolving	J. H. Hawes and O. W. Brock	108, 023
Pistols, Safety-guard for	R. D. Hay	109, 513
Piston	I. D. Buck	103, 682
Piston-connection	H. F. Pease	102, 703
Piston for steam-pumps	L. J. Knowles	105, 465
Piston head and valve, Combined	G. Weinman	104, 909
Piston-packing	J. Clark	99, 846
Piston-packing	W. D. Whitmore	100, 477
Piston-packing	E. A. Walker	101, 792
Piston-packing	J. Clark	103, 140
Piston-packing	O. Kelsey	103, 343
Piston-packing	J. Hughes	104, 459
Piston-packing	L. J. Knowles	105, 466
Piston-packing	W. J. Ford	107, 243
Piston packing	F. McConnell	107, 274
Piston-packing	L. Turner	108, 653
Piston-packing	J. Gates	108, 999
Piston-packing	W. Ord	109, 242
Piston-packing, Steam	J. Wheelock	99, 990
Piston, Pump	J. D. Alvord	109, 994
Piston-rod packing	P. and J. Eckford	101, 840
Piston-rod packing	H. T. Lee	102, 137
Piston-rod packing	E. A. Richmond	108, 188
Piston-rod packing	W. Hartley	110, 035
Pitcher, Ice	T. B. Fitts and A. D. Cooke	101, 850
Pitcher, Sirup	J. H. Hobbs	102, 124
Pitchfork	G. Van Sickle	98, 648
Pitching and coating barrels, casks, &c., Apparatus for	L. Schulze	109, 948
Pitching barrels, Apparatus for	L. Schulze	106, 964
Pitman	T. Kealey	103, 196
Pitman	J. H. McGowan	109, 138
Pitman-connection	S. T. Lamb	100, 157
Pitman-head	J. L. Kretser	107, 788
Pitmen	C. H. Perkins	109, 047
Pitmen to cutter-bars, Mode of connecting	W. Green	99, 563
Plaiting-device	W. Walker	108, 854
Plaiting-device	W. Walker	108, 855
Plane	T. O. Callahan	107, 757
Plane	W. B. Glover	108, 586
Plane	E. H. Morris	109, 037
Plane	L. Bundy	109, 174
Plane, Bench	L. D. Tredway	99, 275
Plane, Bench	J. R. Bailey	105, 767
Plane, Carpenters'	Z. Phillips	102, 966
Plane, Carpenters'	C. G. Miller	101, 753
Plane, Carpenters'	C. E. Tucker	105, 869
Plane, Carpenters'	R. Phillips	106, 868
Plane-guide	M. Garland	106, 808
Plane-iron, Cap for	C. N. Tuttle	103, 946
Plane, Joiners'	G. C. Beckwith	99, 137
Planer, Cutter-head for	J. More	107, 943
Plane, Splint	P. N. Drake and D. Drummond	107, 765
Plane-stock	J. Katz	102, 406
Planing and molding machine	F. Douglas	105, 657
Planing and squaring the ends of segmental stereo-type-plates, Machine for	R. Vose	100, 368
Planing-chuck	A. Newell and W. Pinn	102, 577
Planing-machine	J. B. Schenck	99, 008
Planing-machine	W. W. Carey and G. W. Harris	99, 157
Planing-machine	J. B. Schenck	99, 599
Planing-machine	M. L. Andrew	99, 808
Planing-machine	L. B. Walker	100, 695
Planing-machine	G. E. Woodbury	101, 072
Planing-machine	A. M. Hills	101, 462
Planing-machine	T. L. Carley and M. Broughton	102, 219
Planing-machine	G. H. Mansfield	102, 842
Planing-machine	J. Richards	103, 080
Planing-machine	W. Teal	105, 997
Planing-machine	F. Douglas	106, 459
Planing-machine	G. T. Pearsall	106, 281
Planing-machine	A. Judson	107, 502
Planing-machine	C. Van Haagen	108, 305
Planing-machine	T. Llewellyn	108, 801
Planing-machine	J. Kuehne	103, 200
Planing-machine, Cutter-head for	D. Stevens	106, 421
Planing-machine, Stone	A. T. Merriman	99, 218

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Planking-set .....	E. H. Parker .....	105, 719
Planter .....	H. G. Porter .....	109, 936
Planter and cultivator .....	N. Earlwine .....	107, 235
Planter and cultivator .....	S. Bacher .....	110, 187
Planter and cultivator, Corn .....	N. Breed .....	98, 663
Planter and cultivator, Seed .....	W. D. Stroud .....	101, 939
Planter and distributor .....	D. McKellar .....	107, 796
Planter and fertilizer, Corn .....	H. K. and J. E. Roberts .....	98, 886
Planter and fertilizer, Corn .....	A. L. Holcomb .....	104, 591
Planter and fertilizer-distributor, Cotton-seed .....	H. C. Harris .....	100, 526
Planter and fertilizer-distributor, cotton-seed, Com- bined. ....	W. M. McLendon .....	103, 067
Planter and marker, Corn .....	F. Ogden .....	103, 044
Planter and seeder, Combined .....	W. E. Fricke .....	106, 806
Planter, Broom-corn seed .....	J. Bush .....	103, 427
Planter, Corn .....	G. D. Hayworth .....	100, 032
Planter, Corn .....	E. A. Thrush .....	100, 215
Planter, Corn .....	S. Buck .....	100, 495
Planter, Corn .....	W. Gilman .....	100, 748
Planter, Corn .....	P. S. Starnes .....	101, 176
Planter, Corn .....	T. Brockway .....	101, 349
Planter, Corn .....	C. Hippensteel .....	102, 004
Planter, Corn .....	J. M. Kiracofe .....	102, 017
Planter, Corn .....	J. W. Magers .....	102, 564
Planter, Corn .....	L. B. Tarbox .....	102, 618
Planter, Corn .....	W. E. Vernon .....	103, 259
Planter, Corn .....	J. G. Fetzer .....	103, 315
Planter, Corn .....	B. Porter .....	103, 499
Planter, Corn .....	N. C. Davis .....	104, 280
Planter, Corn .....	E. E. Hardy and N. Dubrul .....	104, 303
Planter, Corn .....	B. F. Tomb .....	104, 664
Planter, Corn .....	D. Keethler .....	105, 090
Planter, Corn .....	T. Dale .....	105, 314
Planter, Corn .....	J. A. Davis .....	105, 316
Planter, Corn .....	J. M. Piper .....	105, 365
Planter, Corn .....	J. A. McClure .....	105, 473
Planter, Corn .....	I. A. Keeler .....	105, 578
Planter, Corn .....	W. H. Littel .....	105, 702
Planter, Corn .....	J. W. Crume .....	106, 034
Planter, Corn .....	G. W. Pitman .....	106, 202
Planter, Corn .....	L. West .....	106, 898
Planter, Corn .....	L. Winston .....	106, 976
Planter, Corn .....	M. Ackermann .....	106, 981
Planter, Corn .....	J. L. Bond .....	107, 156
Planter, Corn .....	S. Mickley .....	107, 280
Planter, Corn .....	P. Soule .....	107, 302
Planter, Corn .....	H. A. Nicholls .....	107, 402
Planter, Corn .....	J. Cosand .....	107, 457
Planter, Corn .....	M. L. and J. B. Kissell .....	107, 508
Planter, Corn .....	W. M. Meyers .....	107, 520
Planter, Corn .....	H. C. Beshler .....	107, 857
Planter, Corn .....	H. R. Holland .....	107, 908
Planter, Corn .....	N. Swigart .....	108, 064
Planter, Corn .....	R. Erdly .....	108, 468
Planter, Corn .....	G. R. Vaughan .....	108, 656
Planter, Corn .....	C. Wisdom .....	108, 865
Planter, Corn .....	H. Koeller .....	109, 225
Planter, Corn .....	J. S. Dickason .....	109, 499
Planter, Corn .....	G. H. Peek .....	109, 543
Planter, Corn .....	G. Paddington .....	109, 837
Planter, Corn .....	N. Mendenhall .....	109, 923
Planter, Corn .....	R. B. and H. Carson .....	110, 207
Planter, Corn .....	J. T. Carter and M. B. Williamson .....	110, 341
Planter, Corn .....	B. A. Ramsey .....	110, 393
Planter, Corn .....	C. A. Haskell .....	110, 458
Planter, Corn and cotton, Fertilizer-distributor, cot- ton chopper, and cultivator combined. ....	J. F. Tucker .....	103, 688
Planter, Corn and cotton-seed, and fertilizer-distributor.	R. M. Brooks .....	102, 910
Planter, Corn and seed .....	W. C. Lockwood .....	105, 703
Planter, corn, Hand .....	W. D. Stroud .....	102, 611
Planter, corn, Hand .....	H. Hickman .....	102, 818
Planter, corn, Hand .....	A. C. L. Davis .....	103, 153
Planter, corn, Hand .....	H. Dyer .....	106, 568
Planter, corn, Hand .....	G. Burson .....	107, 594
Planter, corn, Hand .....	G. Burson .....	107, 595
Planter, corn, Hand .....	P. McCollum .....	109, 437
Planter, corn, Marking-attachment to .....	E. Sawyer .....	107, 294
Planter, corn, Self-working rotary .....	J. Simonton .....	99, 792
Planter, Cotton .....	E. L. Sykes .....	99, 031
Planter, Cotton .....	T. T. and G. T. Thorne .....	99, 499
Planter, Cotton .....	A. G. W. Foster .....	103, 580

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Planter, Cotton and corn	E. Wagner	108, 947
Planter, Cotton, and fertilizer-distributor	B. H. Washington	108, 415
Planter, Cotton, and guano-distributor, combined	J. E. Ross	110, 290
Planter, Cotton-seed	B. Smith	99, 361
Planter, Cotton-seed	J. P. Allen	101, 206
Planter, Cotton-seed	W. W. Croom	101, 232
Planter, Cotton-seed	J. Trump	101, 947
Planter, Cotton-seed	J. Lytch	103, 759
Planter, Cotton-seed	E. J. Hudson	104, 157
Planter, Cotton-seed	J. Riggsbee	105, 000
Planter, Cotton-seed	B. Smith	105, 006
Planter, Cotton-seed	T. C. Garlington	105, 935
Planter, Cotton-seed	H. Nicholls	106, 859
Planter, Cotton-seed	F. Sloan	107, 730
Planter, Cotton-seed	M. S. Burns	108, 445
Planter, Cotton-seed	A. C. Smith	108, 643
Planter, Cotton-seed	J. C. King	109, 222
Planter, Cotton-seed and corn	J. B. Goodwin	101, 257
Planter, Cotton-seed and corn	I. A. Towers	110, 311
Planter, Grain	I. Bogart	103, 289
Planter, Potato	S. T. Godfrey	98, 687
Planter, Potato	J. Krehbrill	103, 058
Planter, Potato	T. Herbert	103, 591
Planter, Seed	N. Mendenhall	99, 217
Planter, Seed	G. W. Brown	99, 286
Planter, Seed	T. H. Smith	103, 382
Planter, Seed	J. E. White	104, 082
Planter, Seed	P. Alling	105, 621
Planter, Seed	L. Smith	106, 631
Planter, Seed	C. R. Edwards	107, 467
Planter, Seed	B. A. Ramsey	108, 051
Planter, Seed	J. M. Elliott	108, 968
Planter, Seed, and fertilizer	D. P. Webster	106, 751
Planter, seed, Hand	J. Heberling	104, 028
Planting and fertilizing machine	S. L. Allen	108, 672
Plant-protector	A. Tuttle	98, 645
Plant-protector	W. N. Sprague	98, 692
Plaster, Healing	W. Kramer	102, 836
Plate and glass, Composition for cleaning	H. Teats	101, 679
Plated goods, Finishing the surface of	J. Rogers	108, 940
Plate, Ferrottype	H. M. Hedden	100, 291
Plate for harness-saddle	J. H. Garrett	108, 900
Plate-holder	J. Carlin	98, 923
Plate-lifter	E. Gibbs	104, 298
Plate-lifter	H. P. Brooks	109, 715
Plate, metallic, Fastening artificial teeth to	H. B. Hale	108, 588
Plate-screen for screening paper-pulp, Metallic	A. St. C. Winchester	105, 755
Platform, Dumping	R. M. Fish	101, 451
Plating, Nickel	W. J. Kuhns	103, 201
Plow	L. L. Sloss	98, 640
Plow	T. E. C. Brinly	99, 830
Plow	A. C. Judson	100, 042
Plow	M. Rigell	100, 325
Plow	M. Rigell	100, 326
Plow	D. Heiges	100, 624
Plow	L. T. Webster	100, 696
Plow	M. Fort	100, 743
Plow	T. T. Mattox	100, 780
Plow	M. K. Dahl	100, 869
Plow	R. J. Wheatley	103, 957
Plow	D. T. Singleton	101, 056
Plow	J. S. Godfrey	101, 256
Plow	S. D. Sayre	102, 192
Plow	W. M. Lanham	102, 687
Plow	A. F. Eppes	102, 789
Plow	S. W. Pope	102, 860
Plow	H. Gale	103, 038
Plow	R. Roles	103, 663
Plow	W. S. Rabb	103, 777
Plow	H. C. Cloyd	103, 932
Plow	M. Laffin and E. Slosson	104, 166
Plow	J. Lane	104, 964
Plow	J. T. Mathis and G. W. Harrison	105, 103
Plow	T. Sheehan	105, 134
Plow	J. S. Godfrey	105, 446
Plow	G. Wharton	105, 531
Plow	J. D. Hall	105, 673
Plow	S. W. Pope	105, 843
Plow	I. Eastwood	106, 344
Plow	W. G. Coombs	106, 556
Plow	R. Dickie and H. K. Johnston	106, 559



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Plow.....	J. M. Smith.....	106, 966
Plow.....	H. Gale.....	107, 033
Plow.....	R. Gibbs.....	107, 037
Plow.....	A. B. Dailey.....	107, 228
Plow.....	C. M. Gordon.....	107, 481
Plow.....	F. M. Franklin.....	107, 606
Plow.....	D. Fulton.....	107, 676
Plow.....	D. Morris.....	107, 705
Plow.....	C. Snyder.....	107, 828
Plow.....	C. W. Snead.....	107, 973
Plow.....	M. Butler.....	108, 004
Plow.....	B. C. Blomsten.....	108, 035
Plow.....	J. R. P. Jett.....	108, 149
Plow.....	L. Eastwood.....	108, 243
Plow.....	A. and F. M. Franklin.....	108, 247
Plow.....	W. T. Bunn.....	108, 444
Plow.....	H. M. Keith.....	108, 488
Plow.....	M. L. Gibbs.....	108, 699
Plow.....	G. W. Ream.....	108, 730
Plow.....	J. W. Webb.....	108, 860
Plow.....	E. Dietsch.....	108, 892
Plow.....	R. S. Crockett.....	108, 975
Plow.....	A. Day.....	108, 979
Plow.....	L. W. Richardson.....	109, 250
Plow.....	T. E. C. Brinly.....	109, 290
Plow.....	T. E. C. Brinly.....	109, 291
Plow.....	O. Osborn.....	109, 340
Plow.....	H. Smith.....	109, 352
Plow.....	J. O. Billing.....	110, 336
Plow.....	J. Archer.....	110, 417
Plow.....	A. C. Smith.....	110, 506
Plow.....	J. Clifton.....	110, 550
Plow and cultivator, Combined.....	J. Wolpert.....	101, 200
Plow and cultivator, Combined.....	J. M. Landes.....	106, 837
Plow and cultivator, Convertible.....	C. L. Reid.....	101, 380
Plow and harrow, Combined.....	J. F. Draucher.....	107, 862
Plow and planter.....	P. Kling.....	108, 032
Plow and planter, Corn.....	C. Sintz.....	107, 110
Plow and planter, Corn.....	H. C. Osborn.....	107, 709
Plow and planter, Cotton.....	J. H. Hammon.....	108, 476
Plow and planter, Seed.....	J. B. and J. C. Watt.....	106, 896
Plow and scraper for roads, Combined.....	T. B. Parker.....	108, 176
Plow-beam, Gang.....	J. W. Sursa.....	107, 560
Plow-beams, Machine for rolling.....	W. Gilman.....	105, 668
Plow, Cast-iron.....	J. K. Odell and W. S. Little.....	109, 929
Plow-clevis attachment.....	H. C. Sieverling.....	110, 080
Plow, Corn.....	W. B. Raper.....	98, 708
Plow, Corn.....	M. C. Buffington.....	101, 706
Plow, Corn.....	M. R. Goff.....	104, 729
Plow, Corn.....	H. Harrier.....	106, 693
Plow, Corn.....	F. G. Mourning.....	107, 400
Plow, Corn.....	W. C. Clifton.....	108, 239
Plow, Corn.....	J. A. Walter and E. Bushman.....	108, 857
Plow, Corn.....	W. and J. C. French.....	109, 403
Plow, Corn.....	E. Phillips.....	109, 934
Plow, corn and cotton, Cultivating.....	W. R. Blanchard.....	105, 892
Plow-coltter.....	G. Curkendall.....	103, 148
Plow-coltter, Revolving.....	M. Richards.....	101, 509
Plow, Cotton.....	T. Guice.....	109, 893
Plow, Cotton.....	J. Wiley.....	110, 411
Plow, Cultivator.....	L. Homrighouse.....	102, 543
Plow, Cultivator.....	J. G. Miner.....	104, 754
Plow, Cultivator.....	V. Bolis.....	107, 754
Plow, Cultivator.....	T. F. Jones.....	109, 629
Plow, Ditching.....	I. S. Sheets.....	102, 599
Plow, Ditching.....	S. S. Wood.....	106, 443
Plow, Ditching.....	G. Chamberlain.....	107, 162
Plow, Double-shovel.....	G. W. Lawbaugh.....	100, 298
Plow, Double-shovel.....	G. Perry.....	102, 150
Plow, Double-shovel.....	S. G. Rayl.....	107, 409
Plow-feeder.....	J. Richardson.....	101, 766
Plow, Gang.....	S. Welch.....	99, 379
Plow, Gang.....	J. and S. Cox.....	99, 538
Plow, Gang.....	G. R. Duval.....	100, 383
Plow, Gang.....	J. Price.....	101, 038
Plow, Gang.....	J. W. Surser.....	101, 539
Plow, Gang.....	P. H. Flansburgh.....	102, 801
Plow, Gang.....	E. W. Walton.....	105, 528
Plow, Gang.....	D. A. Sears.....	105, 600
Plow, Gang.....	J. Alloways.....	105, 879
Plow, Gang.....	A. Ellison.....	106, 799

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Plow, Gang.....	J. H. Andrews.....	106, 982
Plow, Gang.....	N. Spencer, jr.....	107, 829
Plow, Gang.....	J. W. Treadway.....	108, 214
Plow, Gang.....	C. Atwood.....	108, 311
Plow, Gang.....	J. L. Parcell.....	108, 516
Plow, Gang.....	W. Newlin.....	108, 724
Plow, Gang.....	W. Mason.....	109, 136
Plow, Gang.....	T. Bepler.....	110, 281
Plow, Gang.....	J. Harris.....	110, 356
Plow, gang, and cultivator, Combined.....	S. C. Thornton.....	106, 743
Plow, Grading and ditching.....	S. N. Caldwell.....	105, 902
Plow grinder and polisher.....	M. Devault.....	102, 508
Plow-handle.....	W. E. Wyche.....	108, 671
Plow-handles, Machine for bending.....	J. Woodburn.....	110, 184
Plowing and harrowing machine.....	A. Cunningham.....	98, 569
Plow, joiners', Attaching handle to.....	C. H. Weigle.....	102, 630
Plow-jointer.....	D. Dillenback.....	108, 771
Plow-jointer, Adjustable.....	J. M. Leonard.....	110, 251
Plow, Mold-board for.....	J. Lane.....	107, 925
Plow, planter, and cultivator.....	E. Bourne.....	107, 218
Plow, planter, and cultivator, Combined.....	T. J. Smith.....	99, 118
Plow, Potato.....	A. Leonard.....	106, 702
Plow, Reversible.....	E. C. Hodges.....	103, 907
Plow, Rotary.....	N. T. Judd.....	103, 741
Plow, Rotary power.....	J. Tranter, J. Kinsey, and J. M. Carr.....	107, 639
Plow, Adjustable draught-service for.....	C. L. Jackson.....	103, 215
Plows and cultivators, Fender for.....	J. C. and W. F. Curryer.....	105, 047
Plows, Attaching draught to.....	G. W. Kidwell.....	107, 692
Plows, Attachment to.....	J. W. Murfee.....	106, 192
Plows, Carriage-attachment for.....	J. Zoerberlein.....	109, 567
Plows, Clod-fender for.....	W. B. Kidder.....	106, 064
Plows, Corn-planting attachment for.....	J. F. Byland.....	100, 974
Plows, cultivator-teeth, &c., Plates and bars for the construction of.....	W. H. Singer.....	108, 641
Plows, Device for operating.....	J. O. Potter.....	109, 048
Plows, Dirt-gauge for.....	J. Cluckner.....	100, 984
Plows from choking, Device for preventing.....	W. M. Eccles.....	105, 660
Plows, handle-seat for.....	E. Wiard.....	102, 071
Plowshares, Manufacture of.....	J. Lane.....	106, 838
Plow, Shovel.....	P. R. Parcell.....	108, 047
Plow, Shovel.....	L. Luppen.....	108, 272
Plow, Shovel.....	L. Luppen.....	108, 273
Plow, Shovel.....	L. Luppen.....	108, 274
Plow, Shovel.....	L. Luppen.....	108, 275
Plow, Shovel.....	F. Luppen.....	108, 276
Plow, Shovel.....	I. A. Benedict.....	109, 999
Plow, shovel, Shifting.....	A. Snyder.....	109, 960
Plows, Machine for making.....	J. Urie.....	102, 731
Plows, Mold-board for.....	F. E. Sessions and L. A. Knox.....	96, 516
Plow, Snow.....	T. C. Churchman.....	104, 113
Plow, Snow.....	J. N. Drake.....	105, 185
Plow, Snow.....	R. C. Harris.....	107, 485
Plow, Snow.....	A. Dunbar.....	108, 338
Plow, Snow.....	A. M. Butts.....	108, 565
Plow, Snow.....	C. F. Hornbeck and W. J. Carns.....	109, 819
Plow, Snow, for railways.....	T. Dougherty.....	110, 446
Plow, Snow, for railways.....	R. Wilson.....	101, 693
Plows, Pulverizing-attachment for.....	A. A. Rhodes and W. Tash.....	99, 236
Plows, Riding-attachment for.....	A. E. and A. L. Porter.....	100, 860
Plow, Steam.....	A. L. Taveau.....	101, 395
Plow, Steam.....	M. N. Lynn.....	103, 635
Plow, Steam.....	W. Beckett.....	103, 704
Plow, steam, Rotary.....	J. T. Wilson.....	106, 441
Plow, Submarine.....	A. Morrison and R. E. Rose.....	104, 981
Plow, Subsoil.....	W. Watkins.....	99, 377
Plow, Subsoil.....	T. L. Cotter.....	105, 551
Plow, Subsoil.....	E. M. Query.....	105, 844
Plow, Subsoil.....	L. V. B. Martin.....	108, 164
Plow, Subsoil.....	L. Carleton.....	108, 329
Plow, Subsoil.....	J. H. Johnson.....	108, 485
Plow, Subsoil.....	F. G. Wilder.....	110, 525
Plow, Subsoil and scraper, combined.....	J. Reynolds.....	100, 188
Plows, subsoil, Attaching the point to the shank of.....	J. W. Murfee.....	106, 193
Plows, Subsoil-attachment for.....	R. Johnson.....	102, 825
Plows, Subsoil-attachment for.....	A. F. Roberts.....	108, 939
Plow, subsoil, Pulverizing-attachment for.....	L. E. Brardin.....	103, 002
Plow, Sulky.....	J. H. Colo.....	101, 435
Plow, Sulky.....	J. G. Boyd.....	101, 574
Plow, Sulky.....	J. L. Van Gorder.....	106, 003
Plow, Sulky.....	B. R. Hubbard.....	107, 052
Plow, Sulky.....	H. W. Mason.....	107, 938
Plow, Sulky attachment to.....	J. H. Reynerson and J. Worrel.....	105, 649

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Plows, Vibrating-collar for.....	J. S. Johnston.....	101, 739
Plow, Swivel.....	E. G. Matthews.....	108, 919
Plow, Swivel.....	F. Holbrook, J. A. House, and J. Nourse	103, 187
Plow, swivel, Cutter-stock for.....	E. G. Matthews.....	103, 215
Plow, Traction-machine for.....	S. S. Stuntz.....	106, 102
Plow, Wheel.....	J. E. Swallow.....	106, 294
Plow, Wheel.....	H. C. Carr.....	106, 548
Plow, Wheel.....	J. E. Swallow.....	109, 684
Plow, Wheel.....	J. H. Suydam.....	110, 401
Plug, Boiler-tube.....	R. L. Neill.....	104, 759
Plug, Gas and water pipe.....	E. P. Schutt.....	100, 456
Plug-tobacco machine.....	L. W. Spencer.....	106, 883
Plunger for glass-molds.....	J. McCord.....	101, 485
Pocket-book.....	J. Lehman.....	109, 827
Pocket-books, Manufacture of.....	J. C. Arms.....	106, 450
Pocket or "charm" letter-case.....	G. S. Rice.....	104, 499
Pockets, Safety-attachment for.....	H. R. S. Colton.....	100, 728
Pockets, Safety-attachment for.....	F. L. Roel.....	100, 805
Poke.....	A. F. Cruttenden.....	102, 778
Poke, Animal.....	W. Kelly.....	105, 579
Pole-ascending apparatus.....	G. Fleming.....	100, 613
Poles and shafts from vehicles, Apparatus for detach- ing.....	L. O. Kunze.....	109, 521
Pole-socket.....	C. W., and J. D. Wilcox.....	102, 456
Policemen's badges, Fastening for.....	T. Kirkpatrick.....	106, 902
Polisher and holder, Flat-iron.....	W. B. Mason.....	100, 649
Polishing-machine.....	J. Gooden.....	109, 610
Polishing-wheels, &c., Emery.....	W. P. Van Kleeck.....	104, 231
Pomatum, Putting up.....	E. Ludde.....	109, 917
Porcelain paste, Apparatus for pulverizing.....	J. R. Alsing.....	99, 128
Portable apparatus for curing meats, &c.....	H. J. Noyes and S. C. Talcott.....	104, 632
Portfolio, Commercial.....	S. E. Mandelbaum.....	100, 050
Postal and revenue stamps, Adhesive.....	A. C. Fletcher.....	101, 604
Post, Fence.....	M. K. Butterfield.....	99, 288
Post, Fence.....	C. J. Shuttleworth.....	105, 988
Post, Fence.....	S. A. Darrach.....	106, 035
Post, Fence.....	O. L. Larkin.....	106, 375
Post, Fence.....	R. M. Filson.....	110, 221
Post for pegging-jack.....	D. Bowker.....	103, 835
Post, Hitching.....	W. W. Powers.....	101, 657
Post, Hitching.....	J. S. Rohrer.....	101, 662
Post, Hitching.....	J. Oathoudt.....	104, 875
Post, Hitching.....	W. S. Owings.....	110, 066
Post-holes, Machine for making.....	J. M. Kirkpatrick.....	110, 372
Postmarking stamp-canceling machine.....	C. E. Donnellan.....	109, 882
Post, Picket-fence.....	A. M. Freeman, C. P. Idell, and B. Vanderhoven.....	109, 402
Post-office cabinet for Sunday-school and other rooms.....	W. M. and A. Clark.....	106, 325
Posts, fence, Setting.....	W. Fulkerson.....	107, 770
Posts, Method of setting.....	U. B. Stribling.....	107, 637
Potash, Manufacture of pure carbonate of.....	C. F. Moll.....	105, 968
Potato and fruit peeler.....	M. B. Atkinson.....	107, 321
Potato-digger.....	G. W. Knight.....	99, 575
Potato-digger.....	O. E. Mallory.....	100, 168
Potato-digger.....	W. R. Prince.....	100, 667
Potato-digger.....	H. C. Carr.....	100, 854
Potato-digger.....	M. W. Knox.....	101, 474
Potato-digger.....	O. Patterson.....	101, 499
Potato-digger.....	E. Ross.....	101, 921
Potato-digger.....	J. H. Billmeyer.....	102, 479
Potato-digger.....	J. Hall, jr.....	102, 811
Potato-digger.....	J. Hall, jr.....	102, 812
Potato-digger.....	J. Hall, jr.....	102, 814
Potato-digger.....	M. Johnson.....	103, 194
Potato-digger.....	C. V. Derze.....	103, 258
Potato-digger.....	M. Johnson.....	103, 469
Potato-digger.....	D. Bibbee and W. Rand.....	104, 251
Potato-digger.....	J. Albaugh.....	104, 401
Potato-digger.....	D. B. Westfall.....	104, 518
Potato-digger.....	E. Finch.....	105, 324
Potato-digger.....	U. R. Harlow.....	106, 058
Potato-digger.....	L. Henderson.....	106, 583
Potato-digger.....	C. Darling.....	107, 229
Potato-digger.....	L. Berry.....	107, 327
Potato-digger.....	S. E. Anthony.....	107, 433
Potato-digger.....	G. M. Marks.....	107, 698
Potato-digger.....	A. L. Bausman.....	108, 093
Potato-digger.....	W. Dillon.....	108, 117
Potato-digger.....	M. W. Knox.....	108, 490
Potato-digger.....	N. Vandenburgh.....	108, 537
Potato-digger.....	A. R. Wixom.....	109, 093

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Potato-digger .....	G. M. Hoag .....	109, 211
Potato-digger .....	W. Joseph .....	109, 217
Potato-digger .....	J. W. Corwin .....	109, 389
Potato-digger .....	N. Vandenburgh .....	109, 974
Potato-digger .....	W. Tripp .....	110, 514
Potato-digger, Agitator-wheel for .....	J. Hall, jr .....	102, 813
Potato-diggers, Vine-puller for .....	L. Berry .....	107, 328
Potato-digging machine .....	L. Cochran .....	109, 111
Potato-roots, Plow for cutting .....	H. M. Keith .....	107, 063
Potato-separator .....	R. Haviland .....	101, 731
Potatoes, &c., Apparatus for assorting .....	J. F. Unglish .....	102, 886
Potatoes, Machine for assorting .....	B. D. and D. Vanderveer and T. Denise .....	108, 655
Pot, Coffee .....	J. F. Still .....	109, 152
Pot, Flower .....	M. Ludlam .....	100, 300
Pot for glue, paint, &c. ....	J. J. Wilson .....	109, 090
Pot for smelting glass .....	R. Coombs and H. J. Leasure .....	102, 502
Pot, Marking .....	W. H. Green .....	107, 250
Pot, Sprinkling .....	W. L. Fish .....	98, 481
Pottery, &c., Manufacture of .....	P. Marquardt .....	103, 304
Pottery-machine .....	S. R. Thompson .....	104, 795
Pottery-ware, Manufacture of .....	I. W. Knowles .....	108, 157
Pounding-machine .....	J. Rosenkranz .....	106, 409
Powder, compressed, Exploding .....	E. Gomez .....	99, 665
Powder-flask .....	F. E. Darrow .....	110, 210
Powder, Machine for pressing and graining .....	P. A. Oliver .....	101, 032
Powders, Machine for folding .....	J. W. Maxwell .....	102, 568
Power, Apparatus for transmitting .....	B. Williams .....	99, 737
Power, Churn .....	G. Threlkeld .....	104, 627
Power, Floating-mill .....	A. G. Heitmann .....	100, 761
Power, Horse .....	J. Fraser and W. Thomas .....	98, 947
Power, Horse .....	C. Roberts and J. A. Throp .....	99, 951
Power, Horse .....	J. E. Attwood .....	100, 350
Power, Horse .....	P. A. Tobey .....	100, 818
Power, Horse .....	F. W. Robinson .....	101, 045
Power, Horse .....	G. Oerllein .....	101, 498
Power, Horse .....	P. W. Clark .....	102, 491
Power, Horse .....	S. Wheeler .....	104, 240
Power, Horse .....	S. Stoner .....	105, 276
Power, Horse .....	J. R. Hedges .....	105, 680
Power, Horse .....	R. Quinn .....	105, 724
Power, Horse .....	J. W. Murrell .....	106, 194
Power, Horse .....	G. B. Hamlin .....	106, 483
Power, Horse .....	T. B. Pyron .....	106, 505
Power, Horse .....	J. W. Huntoon .....	107, 379
Power, Horse .....	L. A. Peter .....	108, 178
Power, Horse .....	R. W. Crouse .....	109, 114
Power, Horse .....	L. P. Teed .....	109, 967
Power, Horse .....	J. W. Wilcox .....	110, 320
Power, Motive .....	W. M. Watson .....	106, 523
Power, Motive .....	C. Batcheller .....	106, 537
Power, Motive .....	J. M. Cayce .....	107, 221
Power-punch and shears, Combined .....	A. C. Stannard .....	107, 116
Power, Ratchet .....	W. T. Elliott .....	103, 727
Power, Roller-lifting .....	E. Whitcomb .....	110, 523
Power, Spring .....	A. C. Hallam and J. W. McKee .....	99, 669
Power, Transmitting .....	A. W. Morton .....	102, 697
Power, Transmitting, by the medium of air .....	H. Call .....	98, 846
Power, Tread .....	J. H. Dull .....	105, 055
Precious metals, Apparatus for collecting .....	J. T. McDougall .....	109, 533
Precious metals, Separating lead from the .....	S. W. Kirk .....	109, 743
Preparing cotton-waste for cleaning machinery .....	A. Peple .....	108, 821
Preparing wood for painting, Composition for .....	J. Babcock .....	99, 618
Preserving and beautifying crystallized salts upon glass, mica, &c. ....	O. S. Follett .....	105, 560
Preserving and freezing, Apparatus for .....	A. Smith .....	99, 254
Preserves, Apparatus for packing .....	C. T. Provost .....	103, 927
Preventing decay in the timbers of bridges, buildings, &c., Method of .....	A. Allen .....	106, 647
Press .....	D. Curtis .....	100, 607
Press .....	W. I. Tale .....	108, 208
Press and strainer combined .....	W. D. Medbery .....	101, 294
Press, Baling .....	P. K. Dederick .....	99, 295
Press, Baling .....	P. K. Dederick .....	99, 296
Press, Baling .....	P. K. Dederick .....	99, 297
Press, Baling .....	B. F. Stroud .....	102, 879
Press, Baling .....	E. J. Marsters .....	103, 907
Press, Baling .....	G. W. Nutler .....	106, 075
Press, Baling .....	M. D. Cheek .....	106, 660
Press, Baling .....	C. Locher .....	106, 703
Press, Baling .....	W. Her .....	107, 688
Press, Baling .....	G. Duncan .....	108, 772

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Press, Baling.....	E. Hill.....	109, 515
Press, baling, Hand-power.....	W. R. Newman.....	109, 653
Press, Brick.....	J. N. Smith.....	103, 381
Press, Brick.....	J. F. Clark.....	110, 113
Press, Cheese.....	A. G. Bagg.....	96, 132
Press, Cheese.....	G. B. Boomer, T. G. Morse, and R. E. Boschert.....	108, 753
Press, Cheese.....	R. Allen.....	110, 105
Press, Cider.....	F. Hovey.....	102, 402
Press, Cloth.....	C. H. Weston and J. Dennis.....	103, 262
Press, Cloth.....	C. H. Weston and J. Dennis.....	103, 263
Press, Copying.....	W. H. Hawkins.....	101, 262
Press, Cotton.....	C. J. Beasley.....	100, 105
Press, Cotton.....	W. Pendleton and H. M. Boardman.....	102, 963
Press, Cotton.....	W. W. Knowles.....	106, 533
Press, Cotton.....	S. Booton.....	108, 320
Press, Cotton.....	W. Haynie.....	109, 897
Press, Cotton.....	I. N. Patten and E. W. Long.....	110, 278
Press, Cotton.....	N. W. Speers.....	110, 304
Press, Cotton.....	N. Cheek.....	110, 549
Press, Cotton and hay.....	J. G. Cummings.....	104, 936
Press, Cotton and hay.....	C. W. Stoppel.....	106, 229
Press, Cotton and hay.....	W. M. Smith.....	106, 417
Press, Cotton and hay.....	J. P. Herron.....	107, 371
Press, Cotton and hay.....	D. Knowles.....	109, 424
Press, Cotton and tobacco.....	N. Cheek.....	101, 822
Press, Cotton, hay, and hemp.....	W. H. Morris.....	103, 356
Press, cotton, Steam.....	A. Baldwin.....	103, 123
Press-dyeing.....	J. Holt.....	105, 455
Presses, &c., Trip-motion for.....	A. Hamlin.....	107, 363
Presses for cotton, &c.....	W. I. Blackman.....	104, 103
Presses, Hay and other.....	M. V. Northrup.....	110, 585
Presses, printing, Embossing-attachment for.....	H. Wilson.....	103, 267
Presses, printing, Inking-apparatus for.....	F. O. Degener.....	110, 018
Presses, printing, Tympan-sheet for.....	J. Gorman.....	110, 032
Press for baling broom-corn.....	W. J. Wilson.....	106, 440
Press for forming soles for packs.....	W. G. Slater.....	110, 299
Press for hay, cotton, &c.....	S. Miller.....	100, 546
Press for hay, cotton, &c.....	G. W. Swinebroad.....	106, 427
Press for hay, cotton, &c.....	M. G. Cunningham.....	110, 442
Press for preparing shoe-tips.....	E. B. Stimpson.....	105, 382
Press for pressing cotton or hay.....	U. Page.....	104, 991
Press for removing liquid matter from various substances.....	J. Waters.....	108, 657
Press for stencil-printing.....	H. W. Rudolph.....	106, 872
Press for the manufacture of artificial stone.....	L. Dodge.....	109, 397
Press, Fuel.....	T. M. Mitchell.....	103, 913
Press, Hay.....	G. H. Aylworth.....	101, 566
Press, Hay.....	F. Frey.....	105, 062
Press, Hay.....	J. H. Davison.....	108, 889
Press, Hay.....	H. C. Hunt.....	109, 905
Press, Hay and cotton.....	I. N. Patten and D. G. Marden.....	99, 223
Press, Hay and cotton.....	G. W. Swift.....	100, 687
Press, Hay and cotton.....	R. H. and G. F. Cole.....	100, 861
Press, Hay and cotton.....	J. S. Duffy.....	101, 239
Press, Hay and cotton.....	H. R. Walton.....	102, 463
Press, Hay and cotton.....	B. E. Brown and J. Toone, jr.....	103, 557
Press, Hay and cotton.....	R. Ball.....	104, 689
Press, Hay and cotton.....	C. J. Beasley.....	104, 922
Press, Hay and cotton.....	G. Utley.....	106, 638
Press, Hay and cotton.....	M. Wallace.....	106, 893
Press, Hay and cotton.....	J. H. Johnson.....	108, 599
Press, Hay and cotton.....	N. Chapman.....	110, 011
Press, Hay and cotton.....	J. K. Davis.....	110, 443
Press, Heel.....	H. H. Bigelow.....	105, 030
Press, Hop.....	J. Brockway.....	106, 252
Press, Horse-collar pad.....	J. Fraser.....	101, 252
Press, Hydraulic.....	J. A. Desgoffe.....	110, 346
Press, Leather-cutting.....	N. J. Simonds.....	101, 931
Press, Mold-board.....	A. Thompson.....	103, 942
Press, Plumbago.....	J. C. Ford.....	101, 358
Press, Power.....	C. M. and O. G. Stratton.....	105, 605
Press, Power.....	E. W. Bliss.....	105, 632
Press, Power.....	A. D. Hamlin.....	110, 455
Press, power, Feed-device for.....	P. E. Austin.....	108, 312
Press, Printing.....	W. T. Morgans.....	99, 101
Press, Printing.....	T. W. Bracher.....	99, 395
Press, Printing.....	M. Gally.....	99, 551
Press, Printing.....	H. Barth.....	100, 002
Press, Printing.....	J. M. Brownson.....	100, 494
Press, Printing.....	A. Campbell.....	100, 598

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Press, Printing.....	M. Gally.....	101, 254
Press, Printing.....	C. C. Maurice.....	103, 351
Press, Printing.....	J. B. Brown.....	103, 422
Press, Printing.....	W. A. Kerr.....	103, 894
Press, Printing.....	A. H. Bangle.....	103, 961
Press, Printing.....	C. D. Wrightington.....	107, 583
Press, Printing.....	R. M. Hoe and S. D. Tucker.....	108, 785
Press, Printing.....	J. W. Kellberg.....	110, 244
Press, Strip.....	P. Hufeland.....	103, 466
Press, tobacco, Portable.....	W. S. Ford.....	103, 860
Pressure-gauge.....	H. Chwatal.....	101, 832
Pressure-gauge.....	E. A. Wood.....	102, 359
Pressure-gauge and safety-valve.....	A. A. Kent.....	103, 893
Pressure-regulator for water and steam apparatus.....	J. C. Hagan.....	108, 904
Press, Veneering.....	J. More.....	106, 391
Press, Wine.....	C. F. Hartmann.....	100, 142
Price-current sheets, Method of producing.....	W. Smith and H. D. Rogers.....	105, 380
Primer for cartridge.....	I. M. Milbank.....	103, 641
Primer for cartridges.....	B. B. Hotchkiss.....	99, 899
Primer for cartridges, Percussion.....	R. R. Moffatt.....	110, 266
Print-cutting apparatus, Photographic.....	T. M. Saurman.....	106, 080
Printers' chase.....	T. A. Clements.....	108, 759
Printers' chase.....	T. A. Clements.....	108, 760
Printers' inking-roller.....	C. S. Westcott.....	110, 522
Printers' leads, Machine for making.....	K. M. Klees.....	105, 463
Printers, Shooting-stick for.....	B. B. Blackwell.....	107, 154
Printing and dyeing, Manufacture and application of colors for.....	A. Paraf.....	109, 341
Printing-apparatus, Photographic.....	J. H. Hamilton.....	101, 728
Printing-apparatus, Telegraphic.....	T. M. Foote and C. A. Randall.....	105, 060
Printing, Copying-ink for.....	C. McIlvaine.....	108, 615
Printing, Elastic-transfer.....	D. W. Bowdoin.....	105, 300
Printing-roller, Composition for.....	J. G. Husted.....	108, 145
Prints, Apparatus for photographing.....	W. S. Burgess and G. A. Lenzi.....	101, 222
Prisons, Construction of.....	E. May.....	110, 483
Prison-walls, Construction of.....	E. May.....	104, 865
Privy.....	W. J. Warren.....	109, 160
Privy, Portable.....	W. H. Pulver.....	108, 728
Process and apparatus for the manufacture of salt.....	D. Reynolds.....	99, 949
Process and apparatus for using liquid fuel for producing heat and light.....	T. S. Dickerson and R. M. Whipple.....	102, 662
Process and material for ornamenting textile fabrics.....	C. Gunther.....	99, 773
Process for rendering rancid animal fats and for disinfecting the gases evolved.....	A. Smith.....	99, 253
Producing castings direct from the blast-furnace.....	J. W. Middleton.....	108, 375
Projectile.....	J. Link.....	103, 477
Projectile.....	W. H. Shock.....	103, 514
Projectile.....	J. G. Hope.....	107, 909
Projectile.....	E. Drake.....	109, 600
Projectile for ordnance.....	J. G. Butler.....	104, 108
Propeller.....	A. Colton.....	99, 063
Propeller.....	C. Kintzler.....	102, 276
Propeller.....	L. and C. Howard.....	106, 824
Propeller.....	R. Hunter.....	107, 376
Propeller.....	J. D. Ford.....	107, 471
Propeller.....	J. Salter.....	109, 673
Propeller for steam-vessels.....	R. Sutton.....	107, 120
Propeller, Four-wheel.....	R. G. Elder.....	99, 421
Propeller, Minnow.....	W. D. Chapman.....	104, 930
Propeller, Steering.....	F. G. Fowler.....	98, 483
Propelling-apparatus.....	E. T. Ligon.....	105, 098
Propelling-apparatus.....	C. Schilling.....	106, 512
Propelling-apparatus.....	R. Kearney.....	107, 384
Propelling-apparatus for cars.....	J. Roy.....	110, 501
Propelling mechanism.....	C. Sharps.....	109, 458
Protecting and beautifying crystallized metallic surfaces.....	H. M. Johnston.....	105, 576
Provision-safe.....	W. Mead and G. E. Starbuck.....	107, 395
Pruning-implement, Combined.....	C. W. Dawson.....	109, 498
Puddling, boiling, and other furnaces, Stack for.....	W. Swindell.....	106, 636
Puddling-furnace, Fix for.....	C. S. Lynch.....	108, 802
Puddling process for making wrought iron.....	P. Merryman and R. McCombs.....	100, 916
Pug-mill.....	G. E. Noyes.....	101, 154
Pulley.....	G. B. Cowles.....	104, 119
Pulley and clamp, Combined.....	M. W. Clark.....	101, 824
Pulley for gates.....	E. S. Axtell.....	107, 646
Pulley for window-sash.....	Z. E. Sawtelle.....	103, 783
Pulley, Friction.....	J. Steger.....	108, 533
Pulley-mechanism.....	W. H. Brown.....	106, 993
Pulley-sheave.....	V. Knecht.....	103, 474
Pulley, Tight and loose.....	J. G. McCormick.....	107, 275



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Pulverizer, Rotary.....	J. Thompson.....	109, 273
Pulverulent acid phosphate, Manufacture of a hygroscopic.	E. H. Horsford.....	104, 034
Pump.....	W. S. Carr.....	98, 740
Pump.....	J. S. Barden.....	99, 521
Pump.....	R. J. Gould.....	99, 877
Pump.....	M. P. Hall.....	99, 884
Pump.....	G. W. Low.....	100, 162
Pump.....	J. Bryan.....	100, 595
Pump.....	W. Wright.....	100, 702
Pump.....	D. J. Gorton.....	100, 885
Pump.....	E. Lamphear.....	101, 138
Pump.....	E. C. Hammond.....	101, 261
Pump.....	M. S. Orton.....	101, 304
Pump.....	R. L. Wright.....	101, 960
Pump.....	B. F. Gustin.....	102, 199
Pump.....	A. Carver.....	102, 369
Pump.....	J. A. Sinclair.....	102, 442
Pump.....	H. Wadsworth.....	102, 452
Pump.....	J. E. Wilson.....	102, 458
Pump.....	T. De Witt.....	102, 511
Pump.....	J. T. Whipple.....	102, 634
Pump.....	F. C. Wilson.....	102, 743
Pump.....	B. W. Felthousen.....	103, 435
Pump.....	A. Y. McDonald.....	103, 481
Pump.....	W. M. Hamilton.....	103, 738
Pump.....	B. C. Bailey.....	103, 960
Pump.....	E. Edwards.....	104, 289
Pump.....	R. M. Lafferty.....	104, 604
Pump.....	A. Balding.....	104, 688
Pump.....	P. M. and O. Snell.....	104, 786
Pump.....	J. B. Eads.....	105, 056
Pump.....	J. L. Hurlbutt.....	105, 337
Pump.....	H. M. Wyeth.....	105, 401
Pump.....	C. L. Merrill.....	106, 072
Pump.....	P. M. and O. Snell.....	106, 226
Pump.....	H. Van Keuren.....	106, 433
Pump.....	M. Wilcox.....	106, 904
Pump.....	D. O. Holman.....	108, 264
Pump.....	D. O. Holman.....	108, 265
Pump.....	A. Knecht.....	108, 365
Pump.....	G. Hibberd.....	108, 705
Pump.....	W. C. Barker.....	108, 954
Pump.....	M. V. B. Rowley.....	109, 037
Pump.....	A. Sherman and J. W. Shaeffer.....	109, 349
Pump.....	J. H. McGowan.....	109, 534
Pump.....	J. Icard.....	109, 624
Pump.....	H. K. Kenyon.....	109, 631
Pump.....	C. Markley.....	109, 639
Pump.....	W. Shearer.....	109, 678
Pump.....	W. Hartley.....	109, 696
Pump.....	J. B. Siverston.....	109, 955
Pump.....	W. G. Ward.....	110, 177
Pump.....	H. E. Wolcott.....	110, 182
Pump.....	N. P. Sheldon.....	110, 297
Pump.....	R. M. Marchant.....	110, 380
Pump and siphon, Combined.....	W. Pitman.....	104, 641
Pump and siphon, Combined.....	J. D. Averill, G. A. Higgins, and T. Gordon.....	108, 087
Pump-box.....	A. S. Whitehouse.....	110, 319
Pump, Breast.....	L. O. Colvin.....	108, 882
Pump-buckets, Machine for making.....	J. F. Temple.....	101, 182
Pump, Cattle.....	W. H. Wright.....	100, 485
Pump, Centrifugal.....	W. D. Andrews.....	100, 838
Pump, Compound propeller.....	T. Shaw.....	99, 791
Pump, Deep-well.....	H. K. Kenyon.....	104, 855
Pump-device, Steam.....	M. Wilcox.....	100, 576
Pump, Double-acting.....	W. H. Ivens.....	99, 680
Pump, Double-acting.....	M. Braun.....	105, 035
Pump-engines, Device for securing uniform motion in.	W. H. Roberts.....	100, 449
Pump, Force.....	W. Beers and W. Raynor.....	98, 734
Pump, force, Double-acting.....	A. Bagley.....	105, 162
Pump, force, Double-cylinder.....	W. H. Ivens.....	99, 681
Pumping-apparatus.....	D. Stoner.....	104, 374
Pumping-engine, Steam.....	T. E. Blunt.....	106, 312
Pump, Liquor.....	M. Cavanaugh.....	105, 776
Pump, Oil.....	L. S. Lapham.....	104, 168
Pump, Oil-well.....	J. S. Fish.....	102, 241
Pump-rod attachment.....	H. H. Locke.....	103, 632
Pump-rod connection for deep wells.....	H. De Zavala.....	106, 673
Pump-rods, Adjustment for.....	B. Densmore.....	106, 791

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Pump, Rotary.....	J. T. Foster .....	98, 482
Pump, Rotary.....	C. W. Isbell .....	98, 772
Pump, Rotary.....	A. Sluthour.....	100, 057
Pump, Rotary.....	E. Lavens and J. C. Lamb .....	102, 136
Pump, Rotary.....	H. W. Mather .....	102, 140
Pump, Rotary.....	R. Bush .....	102, 768
Pump, Rotary.....	T. Swan .....	103, 684
Pump, Rotary.....	W. A. Allyn.....	104, 403
Pump, Rotary.....	A. Leuchtweiss.....	104, 469
Pump, Rotary.....	R. A. Horning.....	106, 061
Pump, Rotary.....	G. W. Heald and L. D. Sisco.....	106, 581
Pump, Rotary.....	J. Doyle and T. A. Martin.....	109, 117
Pump, Rotary.....	W. D. Andrews.....	110, 330
Pump, Rotary hydro-pneumatic .....	H. M. Paine .....	101, 306
Pumps, Anti-freezing device for .....	J. G. Hanning .....	103, 325
Pump-siphon.....	T. J. Trapp .....	108, 652
Pumps, Lifting-clamp for .....	W. H. Downing .....	101, 595
Pumps, Link connecting the handles and valve-rods of .....	S. Selden and M. Griswold .....	107, 965
Pump-spout.....	J. H. Gleim .....	101, 995
Pump, sprinkling, Portable.....	W. Servant .....	107, 633
Pumps, Sand-chamber for .....	E. C. Johnson .....	98, 503
Pump, Steam.....	T. and G. T. Snowden and I. V. Lynn.....	98, 810
Pump, Steam.....	J. R. Maxwell and E. Cope .....	101, 616
Pump, Steam.....	W. Livingstone .....	103, 756
Pump, Steam.....	A. Friedmann .....	106, 683
Pump, Steam.....	C. L. Stevens .....	107, 977
Pump, Steam.....	G. F. Blako .....	108, 554
Pump, Steam.....	G. M. Weinman .....	109, 980
Pump, Steam-jet.....	A. J. Blakeslee and G. C. Williams .....	110, 110
Pump, Steam-vacuum.....	J. H. Pattee and G. H. Nye.....	103, 076
Pump-stocks, Machine for securing sheet-metal lining in .....	N. T. Coffin.....	105, 912
Pump, Submerged.....	P. H. Cardwell .....	99, 403
Punch.....	I. P. Richards .....	104, 769
Punch and die for punching tubes.....	J. Gibbs .....	99, 309
Punch and press.....	W. S. Lord.....	100, 166
Punch, Brad.....	R. F. Cook .....	103, 429
Punch, Hand.....	O. C. Ford .....	107, 242
Punching and shearing machine.....	W. Culver .....	99, 065
Punching-apparatus.....	T. De Witt.....	102, 510
Punching-machine.....	C. S. Moseley.....	104, 755
Punching-machine, Hand.....	G. C. Miller .....	103, 764
Puncturing and tubular stopper for sealed cans .....	A. Campbell .....	99, 530
Purification of coal-gas.....	E. McMillen .....	100, 309
Purified cast iron from the ore, Manufacture of .....	J. W. Middleton .....	107, 942
Purifying and reducing magnetic ores of iron. Process for.....	J. Y. Smith .....	104, 220
Purifying benzine.....	G. Lupton .....	110, 054
Purifying mine-water, Compound for .....	F. J. Delker.....	110, 345
Putting up medicine.....	F. Kraus .....	108, 034
Pyrometer.....	E. Brown .....	102, 654
Pyroxyline, Treating and molding .....	J. W. and I. S. Hyatt .....	105, 338
Q.		
Quadrant and sextant.....	T. Holzach.....	100, 152
Quartz-crusher.....	J. Quaintance .....	104, 496
Quercitron-bark, Manufacture of.....	M. Wingor .....	108, 669
Quilting-frame.....	J. A. Cookerly .....	103, 987
Quilting-frame.....	J. and J. P. Angus .....	104, 685
Quilting-frame holder.....	N. Young .....	106, 446
R.		
Rack and cooler, Milk.....	L. Shipman .....	101, 054
Rack, Card.....	W. Wendell.....	107, 574
Rack, Card.....	J. F. Curtis .....	108, 887
Rack, Clothes.....	J. Johnson .....	105, 086
Rack, Clothes.....	C. H. Wolcott .....	106, 102
Rack, Clothes.....	H. Baumann and U. Mueller .....	107, 996
Rack, Coat and hat.....	J. M. Keep .....	109, 017
Rack for cars.....	A. Bridges .....	102, 482
Rack for wagon-brake.....	W. J. Lewis.....	107, 930
Rack, Hat and coat.....	G. T. Benson .....	108, 961
Rack, hat and coat, Folding.....	J. H. Monce .....	107, 050
Rack, hat, Extension.....	N. Hayden .....	108, 590
Rack, Hay, for wagon.....	S. J. Smith .....	109, 261
Rack, Music.....	J. R. Hill .....	103, 046
Rack, Pen.....	M. O'Reardon .....	105, 237
Rack, Soap-dish and brush.....	A. Crawford .....	108, 765
Rack, Toast.....	D. Sherwood .....	99, 718
Rack, Towel.....	F. Myers.....	109, 648
Rack, Towel or clothes.....	J. M. Keep .....	103, 751

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Rack, Window-shade .....	J. Pusey .....	104, 767
Radiating or boiler plate .....	A. L. Pennock .....	102, 312
Radiator .....	E. Bourne .....	108, 001
Radiator for heating furnaces .....	C. Harkinson .....	103, 176
Radiator, Steam .....	J. Shackleton .....	101, 668
Radiator, Steam .....	A. C. Baker .....	104, 246
Radiator, Steam .....	S. Sanders .....	104, 501
Radiator, Steam .....	L. S. Daniels .....	108, 978
Rafts, &c., Apparatus for towing .....	E. O. Shepardson .....	100, 197
Rags for carpets, Implement for slitting and joining .....	B. F. Cady .....	99, 154
Rag whipper and duster for treating paper-stock .....	L. Brainerd .....	100, 715
Railings, &c., Wire-work for .....	W. R. Boerner .....	101, 816
Rail, Railway .....	A. Hammer and D. Grim .....	100, 030
Rail, Railway .....	J. Millholland .....	100, 917
Rail, Railway .....	J. C. Hagan .....	101, 611
Rail, Railway .....	E. R. Shepard .....	102, 601
Rail, Railway .....	F. A. Meredith .....	105, 962
Rail, Railway .....	R. Montgomery .....	107, 798
Rail, railway, Compound .....	E. R. Shepard .....	102, 602
Railroad-alarm, Electro-magnetic .....	T. S. Hall .....	103, 174
Railroad-cars, Deflector for window of .....	W. Conrad .....	107, 163
Railroad-cars, Lamp for .....	R. S. Merrill .....	109, 537
Railroad-cars, Packing for the journal-boxes of .....	N. Monroe .....	103, 071
Railroad-cars, Street and station indicator for .....	E. L. Dean .....	104, 563
Railroad-cars, Ventilating-window for .....	M. C. Murphy .....	104, 486
Railroad-cars, Ventilating-window for .....	S. Darling .....	106, 558
Railroad-car window, Device for opening and shutting .....	J. F. Lash .....	109, 326
Railroad-chairs, Machine for rolling .....	D. Eynon .....	99, 868
Railroad-chairs, Machine for slotting .....	D. Eynon .....	99, 869
Railroad-crossings, &c., Electro-magnetic signaling-apparatus for .....	W. Robinson .....	109, 549
Railroad-jack and pinch-bar, Combined .....	M. G. Collins .....	109, 590
Railroad pushing-jack .....	A. Freeman .....	98, 683
Railroad rail and base-plate .....	W. Cooke .....	99, 165
Railroad-rail, Apparatus for bending .....	G. D. Emerson .....	108, 123
Railroad-rail splice .....	G. O. Taylor .....	105, 863
Railroads, Electro-magnetic signal-apparatus for .....	T. S. Hall .....	103, 875
Railroads, Screw-spike for .....	A. C. and I. L. Dunn .....	108, 986
Railroad-signal apparatus, Electro-magnetic .....	A. J. Elder .....	107, 601
Railroad-signal box .....	E. Westfall .....	99, 382
Railroad-signal, Electro-magnetic .....	W. Robinson .....	108, 633
Railroad-switch alarm, Electro-magnetic .....	T. A. B. Putnam .....	99, 233
Railroad-switches, Lock for .....	A. W. Cram .....	109, 182
Railroad-tie lifter .....	E. Bomar .....	99, 142
Railroad-tie lifter .....	W. C. Bomar and A. Troxler .....	103, 710
Rails for railroads, Manufacture of .....	E. Wheeler .....	104, 238
Rails, railroad, Manufacture of .....	H. Lee .....	102, 283
Rails, railway, Fastening for .....	G. Shatswell .....	102, 873
Railway .....	H. Carpenter .....	99, 531
Railway .....	E. G. Markley .....	101, 751
Railway .....	H. S. Weaver .....	106, 434
Railway .....	C. H. White .....	107, 643
Railway box-cars, Door for .....	C. Baker .....	103, 126
Railway-car bumper and draw-head .....	A. Ross and J. Arthur .....	109, 347
Railway-car, Metallic .....	B. J. La Mothe .....	105, 699
Railway-car replacer .....	H. H. Holmes .....	99, 318
Railway-cars, Fire-proof .....	G. C. Bestor .....	106, 771
Railway-cars, Reversible seat for .....	T. J. Close .....	102, 498
Railway cars, Safety-guard for .....	J. A. Wilkinson .....	105, 753
Railway-cars, Spring-seat for .....	T. J. Gifford .....	108, 777
Railway-car trucks, Equalizing-bar for .....	A. Overbagh .....	104, 876
Railway, Cast-iron turn-table for .....	A. J. Wight and W. L. Meeker .....	104, 388
Railway cattle-car .....	C. F. Pike .....	99, 471
Railway-chair and fish-joint .....	E. C. Pierce .....	99, 345
Railway-crossing .....	R. P. Williams .....	105, 754
Railway-crossings, Method of forming the bifurcating end of .....	J. Armstrong .....	108, 429
Railway, Elevated .....	W. Hyde .....	99, 679
Railway, Elevated .....	B. L. and H. Hood and W. Clark, jr .....	100, 893
Railway, Elevated .....	J. M. Abbott .....	101, 204
Railway, Elevated .....	J. M. Hannabs .....	105, 056
Railway-frog .....	D. C. Pierce .....	99, 346
Railway-frog .....	J. C. Rupp .....	109, 670
Railway oil-car .....	S. W. Murray and B. P. Lamason .....	100, 058
Railway-rail chair .....	T. G. Bering .....	98, 546
Railway-rail chair .....	R. Anthony .....	99, 279
Railway-rail chair .....	J. S. Weimer .....	103, 692
Railway-rail chair .....	S. H. Smith .....	105, 504
Railway-rail chair .....	C. R. Joyce .....	109, 418
Railway-rail chair and joint .....	J. M. Orr .....	104, 057
Railway-rail cleaner .....	C. Ortiz and H. Valladares .....	105, 593

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Railway-rail, Compound	W. B. Dunning	98, 934
Railway-rail fastening	W. Palliser	99, 587
Railway-rail fastening	J. Cochrane	106, 256
Railway-rail joint	E. P. Dwight	100, 738
Railway-rail joint	J. Freeland and D. Ward	100, 996
Railway-rail joint	C. A. Spooner and G. A. Hudart	102, 329
Railway-rail joint	G. A. Hudart	108, 142
Railway-rail joint	W. Morehouse	110, 384
Railway-rail joint-fastening	T. B. McConaughy and J. Adams	103, 480
Railway-rails, Compound	D. R. Pratt	99, 787
Railway-rail splice	R. Randolph	99, 948
Railway-rail splice	J. Valentine, F. Harris, and C. Barnes	100, 693
Railway-rail splice	G. P. Rose	102, 043
Railways, elevated, Supporting column for	C. T. Harvey	99, 435
Railway sleeping-car	J. S. DuBois	109, 119
Railways, Metallic sleeper for	C. Fisher	103, 504
Railway snow-shovel	J. W. Elliot	108, 894
Railway-splice and nut-lock	J. Miner and S. Merrick	105, 357
Railways, Snow-plow for	T. Dougherty	110, 446
Railway-station indicator	J. P. Pfau	103, 237
Railway-switch	J. J. Schaeffer, and C. C. Stinemetz	100, 707
Railway-switch	J. R. Howell	104, 156
Railway-switch	N. F. Hawkins	104, 305
Railway-switch and signal working and locking	J. Brunton	102, 483
Railway-switches	W. Wharton, jr.	101, 951
Railways, Switch-stand for	N. N. Dale	98, 472
Railways, Wood and coal dumper for	R. B. Robbins	109, 346
Railway-track	J. N. Farrah and J. Stone	108, 342
Railway-track clearer	R. B. Taylor	104, 375
Railway-trucks, Safety-attachment for	A. Strauss	110, 602
Rain-water conductor and filter	J. C. Hall	104, 450
Raisin-seeder	H. G. Fiske	106, 350
Rake and loader, Hay	G. A. Wing	102, 744
Rake and tedder combined	J. M. Low	99, 923
Rake-attachment for reaper	M. C. Chamberlain and A. Clawson	98, 557
Rake-attachment for reapers	M. C. Chamberlain	104, 827
Rake for harvesters	W. N. Whitely	99, 506
Rake, Garden	L. Sisson	102, 979
Rake, Grain	M. M. Wells	110, 613
Rake, Grain	M. Ellis	107, 018
Rake, Hand-drag	E. Brown	109, 294
Rake, Harvester	J. French	98, 861
Rake, Harvester	W. Pimlott	99, 103
Rake, Harvester	A. and C. W. Palmer	99, 340
Rake, Harvester	C. Buckwalter	99, 397
Rake, Harvester	D. R. Shirk	100, 078
Rake, Harvester	E. W. Skinner	100, 200
Rake, Harvester	W. F. Goulding	100, 615
Rake, Harvester	A. and C. W. Palmer	100, 922
Rake, Harvester	M. A. Partridge	101, 156
Rake, Harvester	J. Farrington	101, 246
Rake, Harvester	V. H. Felt	102, 525
Rake, Harvester	E. R. McCall	103, 217
Rake, Harvester	W. W. Miller	104, 453
Rake, Harvester	C. B. Brown	104, 927
Rake, Harvester	O. O. Storle	105, 139
Rake, Harvester	J. Toay	105, 608
Rake, Harvester	W. T. Eastes	106, 342
Rake, Harvester	J. W. Schuckers	106, 513
Rake, Harvester	D. Clow	107, 004
Rake, Harvester	A. Rank	107, 721
Rake, Harvester	D. B. Shirk	108, 839
Rake, Harvester	A. G. Crane and W. T. Johnston	109, 301
Rake, Harvester	I. A. Johnson	109, 415
Rake, Harvester	G. Oerllein	109, 441
Rake, Harvester	W. Pimlott	109, 449
Rake, Harvester	H. Arbutnot and A. F. Ward	109, 468
Rake, Harvester	W. Sutliff	109, 469
Rake, Harvester	H. Pease	110, 279
Rake, Hay	W. H. Misner and G. E. Marker	105, 967
Rake, Horse	W. Squier	99, 966
Rake, Horse	J. C. Stoddard	100, 950
Rake-teeth, Machine for bending	C. Coleman	99, 638
Rake-teeth, Machine for bending	C. Coleman	101, 230
Rake-teeth, Machine for bending	J. Sugden	107, 305
Ramie and other fibrous stalks, Machine for crushing	E. B. Bigelow	101, 035
Ramie and other plants, Preparing the fiber of	S. M. Allen	103, 275
Ramie and other textile plants, Machine for treating	E. Lefranc and J. Nagoua	106, 700
Rammer for packing tobacco	J. R. Sutton	99, 370
Rammer, Molders'	E. H. Meigs	104, 620
Rammer-staff	A. T. Brewer	102, 214

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Ramrod-stop .....	S. W. Porter .....	106, 405
Ram, Steam .....	T. Hill .....	103, 883
Range, Cooking .....	B. W. Dunklee .....	102, 925
Range, Cooking .....	D. Bosworth .....	106, 027
Range, Cooking .....	J. Albee .....	107, 849
Range, Cooking .....	R. E. Deane .....	108, 691
Range, Cooking .....	D. Stuart and L. Bridge .....	108, 736
Range, Cooking .....	W. Hall .....	110, 566
Range for heating and cooking .....	J. S. Clark .....	107, 876
Rasp .....	I. F. Thompson .....	107, 565
Ratchet and pawl .....	J. H. Durran .....	100, 510
Ratchet and pawl mechanism .....	M. D. Myers .....	100, 315
Ratchet-drill .....	S. Ingersoll .....	104, 317
Ratchet-feed mechanism .....	A. Turnbull .....	107, 567
Ratlins, Attachment for .....	J. C. Knowlton .....	110, 476
Raw-hide for use in chair-seats, Preparing .....	B. F. Wright and J. Rowe, jr .....	105, 759
Razer-honing machine .....	W. Brown .....	99, 551
Razor-strop .....	W. D. Evans .....	102, 790
Reading and writing stand .....	G. Howell .....	98, 869
Reading-glass .....	J. H. Smith .....	107, 969
Reading-stand .....	A. C. Flint .....	103, 593
Reapers, Rake-attachment for .....	M. C. Chamberlain .....	104, 827
Recording-instrument for the electric telegraph .....	W. Thomson .....	109, 688
Reed-board for organs .....	R. Burdett .....	107, 755
Reed for looms .....	J. H. Williams .....	104, 808
Reed musical instrument .....	I. T. Packard .....	105, 718
Reed-organ .....	G. W. Scribner .....	104, 653
Reed-organ .....	G. Woods .....	107, 316
Reed-organ .....	H. N. Goodwin .....	109, 003
Reed-organ bellows-action .....	S. Taylor .....	107, 122
Reed-organ pipe .....	C. W. Small .....	106, 628
Reed-setting machine .....	J. Browning .....	107, 865
Reel and rake for harvesters, Combined .....	S. H. Bingham .....	99, 820
Reel, Clothes-line .....	G. Holman .....	109, 318
Reel, Flour-bolting .....	A. L. Williams .....	103, 002
Reel for clothes-line, Automatic .....	W. Farrah .....	106, 146
Reel for dyeing and finishing silk and velvet-woven fabrics .....	E. Mafat .....	106, 844
Reel, Harvester .....	C. N. Owen .....	107, 804
Reel, Harvester .....	J. H. Keller .....	103, 912
Reeling-machine .....	J. Briggs .....	108, 680
Refining sugar by steam .....	F. Schleifer .....	108, 732
Reflector .....	E. C. Blakeslee .....	98, 662
Reflector for lamps .....	F. Judson .....	99, 908
Reflector for streets .....	A. K. Grim and A. D. Moore .....	101, 470
Reflector, Photographic .....	W. Kurtz .....	104, 963
Refrigerating and making ice, Apparatus for .....	H. T. Yaryan .....	103, 271
Refrigerating and preserving, Apparatus for .....	D. E. Somes .....	100, 681
Refrigerating, Apparatus for .....	A. Guthrie .....	99, 881
Refrigerating oyster-can .....	A. Booth .....	103, 551
Refrigerating, preserving, and ventilating, Apparatus and process for .....	D. E. Somes .....	102, 986
Refrigerator .....	H. M. Diggins .....	99, 862
Refrigerator .....	A. Heinz .....	100, 034
Refrigerator .....	A. J. Chase .....	101, 582
Refrigerator .....	E. S. Cotton .....	101, 588
Refrigerator .....	A. R. Sweetland .....	102, 064
Refrigerator .....	W. G. Holden, jr .....	102, 680
Refrigerator .....	G. W. Walker .....	102, 735
Refrigerator .....	F. W. Hunt .....	103, 336
Refrigerator .....	J. C. Campbell .....	103, 842
Refrigerator .....	B. Sauter .....	104, 209
Refrigerator .....	I. Allegratti .....	105, 763
Refrigerator .....	W. B. Mason .....	105, 959
Refrigerator .....	E. Perkins .....	106, 401
Refrigerator .....	A. H. Phelps .....	108, 386
Refrigerator .....	H. F. Eberts .....	109, 811
Refrigerator .....	A. J. Chase .....	110, 112
Refrigerator and condenser, Cook-room .....	P. D. Vandeventer .....	109, 081
Refrigerator and cooling-apparatus .....	A. B. Ely .....	102, 382
Refrigerator and sideboard .....	W. H. Kern and T. M. Davis .....	107, 180
Refrigerator for buildings .....	J. J. Schilling .....	98, 638
Refrigerator for condensing vapors from fermenting-vats in breweries, &c. .....	L. Angster .....	104, 814
Refrigerator, Ice-cream .....	C. Vignal .....	105, 521
Refrigerator, Railroad-car .....	J. D. Potts and B. P. Lamason .....	104, 765
Refrigerator, Revolving .....	F. Allen .....	110, 328
Refrigerators .....	S. R. Scoggins .....	107, 821
Refrigerators and refrigerator-cars, Lining and covering .....	T. Hyatt .....	101, 879
Refrigerators, Ice-chamber for .....	J. H. Lynch .....	105, 101

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Register, Adding and subtracting .....	H. A. House .....	109, 619
Register air-fluo .....	W. L. McDowell .....	99, 692
Register and directory, Office .....	H. Reutchler .....	102, 592
Register, Counting .....	W. H. McNary .....	103, 221
Register, Fare .....	F. Blackburn and G. W. Woodside .....	109, 715
Register for freight, Tallying .....	F. Nicholson .....	105, 118
Register for odometers .....	W. Yorke .....	103, 272
Register, Game .....	E. H. Keith .....	101, 133
Register, Hot-air .....	W. S. Bronson .....	102, 217
Register, Hot-air .....	A. Watson .....	104, 802
Registering-punch for railroad-conductors .....	A. D. Hoffman .....	100, 036
Register, Passenger, for horse-cars .....	E. L. Fitch .....	104, 566
Register, Plate-printing .....	J. L. Hurley .....	100, 399
Register, School .....	S. S. Nash .....	107, 029
Register, Ventilator .....	H. M. Phinney .....	102, 967
Regulating power conveyed by friction-surfaces .....	B. Tatham .....	101, 940
Regulator and alarm, Water .....	W. Wyatt .....	105, 589
Regulator for machinery .....	T. C. Van Wyck and W. Kent .....	99, 376
Regulator for spirit-meters .....	L. Schulze .....	106, 031
Regulator for steam-heating apparatus .....	A. Walker .....	105, 525
Regulator, Water-wheel .....	J. P. Sibley .....	102, 056
Rein-holder .....	J. Harding .....	98, 492
Rein-holder .....	J. R. Achenbach .....	103, 820
Rein-holder .....	J. Herkimer .....	104, 308
Rein-holder .....	W. H. Cooper .....	105, 651
Rein-holder .....	D. Hurd .....	108, 537
Rein-holder .....	F. B. Scott .....	108, 638
Relay for telegraphic instruments .....	E. S. Hidden .....	99, 892
Relay-magnet .....	L. C. A. J. G. D'Arlinecourt .....	105, 653
Relays and other electro-magnetic instruments, Cut-off for .....	F. M. Perry .....	105, 975
Relishing-machine for tenoning sash .....	G. L. Sullivan and E. Lippincott .....	109, 075
Rendering-tanks, Drawing off lard, tallow, &c., from .....	J. H. Archer .....	103, 823
Resawing-machine .....	L. J. Cobb .....	103, 568
Resawing-machine .....	J. York, jr .....	104, 681
Reservatory for groceries .....	O. R. Cowgill .....	105, 310
Retainer for neck-tie .....	J. B. Bishop .....	98, 660
Retort, Enameled cast-iron .....	T. D. and T. S. Phillips .....	109, 658
Retort-furnace .....	A. F. Du Faur .....	108, 635
Revenue and other stamps, Manufacture of .....	G. T. Jones .....	101, 020
Revenue and postal stamp .....	L. Abraham .....	102, 200
Reversing and cut-off apparatus for steam-engines .....	D. A. Woodbury .....	103, 698
Reversing-gear for steam-engines .....	D. A. Woodbury .....	100, 482
Revolver .....	R. White .....	109, 227
Rheumatism and other diseases, Compound to be used in treating .....	J. B. Rodgers .....	102, 161
Rheumatism, &c., Compound for treating .....	H. A. Chase .....	105, 425
Rheumatism, Compound for cure of .....	A. J. Jenkins .....	109, 216
Rheumatism, Compound for treating .....	W. Landert and J. Deggeller .....	102, 686
Rheumatism, Liniment for the cure of .....	A. A. Riddick .....	110, 288
Rheumatism, Medical compound for .....	N. Jenkins .....	110, 470
Ribbons, &c., Show-case for .....	G. W. Pagett .....	105, 835
Rice-fields, Machine for cleaning and ditching .....	S. M. King .....	108, 269
Riddle for separating grain .....	M. M. Cooper and J. W. Donaldson .....	109, 716
Rigging for vessels .....	R. B. Forbes .....	101, 851
Rim or felly, Hollow metallic .....	S. R. Bryant .....	104, 824
Ring for harness .....	S. Aldred .....	106, 406
Ring-spinning frame .....	B. H. Jenks .....	99, 203
Ring, Suspension .....	D. M. Somers .....	106, 738
Rivers, Device for forming channels in .....	A. W. Harlan .....	104, 586
River-steamers, Arrangement of upper works in .....	D. De Haven .....	105, 438
Rivet .....	H. E. Copeley .....	101, 352
Rivet .....	A. Boyd .....	105, 031
Rivet and screw blanks, Machine for heading .....	V. De M. Upham .....	110, 515
Rivets to buttons, Machine for attaching .....	J. J. Mervesp .....	98, 512
Riveting, Device for .....	S. L. Bower .....	105, 897
Riveting-machine .....	J. Berry .....	109, 575
Road and pavement, Asphalt .....	E. J. De Smedt .....	110, 121
Roads and pavements, Asphalt .....	E. J. De Smedt .....	103, 582
Roads, Combined plow and scraper for .....	T. B. Parker .....	108, 176
Roads, Laying asphalt or concrete pavement on .....	E. J. De Smedt .....	103, 581
Road-vehicle, Steam .....	I. A. Sabin .....	104, 882
Roaster and broiler, Combined .....	T. Drake .....	103, 998
Roasting and baking, Device for .....	J. J. Carroll .....	104, 422
Roasting and drying ores and other materials, Apparatus for .....	A. Duval .....	107, 600
Rock, Apparatus for splitting .....	E. Thayer .....	103, 940
Rock-boring apparatus .....	T. St. John .....	102, 610
Rock-drilling machine .....	J. Hart .....	100, 756
Rock-drilling machine .....	N. Tucker, L. Williams, and H. H. Coppock .....	109, 153



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Rocker for chairs	W. J. Zakrzewska	401, 802
Rocking-chairs, Fan-attachment for	R. Knafl and T. M. Schleier	109, 744
Rocking-horse	J. A. Crandall	100, 263
Rock, Machinery for drilling	W. H. Elliot	102, 383
Rock, Mode of splitting	J. Robb	99, 595
Rock-valve, Balanced	J. C. King	107, 505
Rolled bar for plow-beam blanks	G. W. Joep and W. Bunton	110, 371
Rolled sheet-iron	S. Barker and H. S. Pratt	107, 752
Roll, Elastic	J. B. Forsyth and J. J. Haley	102, 104
Roller and furrowing-machine, Field	M. M. Robbins	108, 056
Roller, Breaker	E. Douden	100, 273
Roller, Field	A. S. Keagy	101, 626
Roller, Field	R. A. McConaughy	107, 074
Roller for fluting-machine	H. G. Pearson	98, 103
Roller for sash-strap for carriages	J. H. Bloodgood	103, 131
Roller, Land	E. Whitcomb and D. A. Gunn	105, 749
Roller, Land	I. W. Searles	108, 057
Roller, Land	G. C. Dolph	110, 019
Roller, Land	J. W. Dilley	110, 554
Rollers, feed and other, Wiping-apparatus for	L. Crawford	107, 667
Roller-shaft for wringers	L. H. Whitney	110, 098
Roller-skate	H. Robbins	102, 971
Rollers, Machine for grinding	J. M. Poole	104, 492
Rollers to wheels, anti-friction, Applying	W. B. Scott	98, 804
Roller, Tobacco	C. A. Jackson	102, 549
Roll for clothes-wringers, Composition	W. H. Towers	104, 514
Roll for crushing and pulverizing machine	E. S. Blake	107, 858
Roll for forming horseshoe-blanks	C. L. Fitzhugh	110, 349
Roll for making rails for street-railways	G. A. Springer	102, 609
Roll for wringers, grain-drills, &c., Vulcanized India rubber	J. R. Bird and G. C. Smith	103, 416
Rolling-machine	J. B. and G. Hastings	102, 816
Rolls, elastic, Manufacture of	J. B. Forsyth	101, 994
Rolls, Hydraulic housing for	G. H. Sellers	103, 667
Roof, Car	J. Garry	108, 130
Roof for buildings, Metal	J. S. Haywood	110, 567
Roofing	T. A. Makibbin	101, 635
Roofing	S. Hughes	106, 825
Roofing	G. Shove	107, 967
Roofing and flooring	P. N. Mackay	100, 167
Roofing, &c., Process of preparing paper for	C. H. Smith	101, 406
Roofing, &c., Machine for tarring paper for	J. Roberts	99, 710
Roofing, &c., Machine for the manufacture of felted fabrics for	S. Kingan	101, 473
Roofing and paving, Material for	J. L. Fulton and J. Bruce	103, 169
Roofing-composition	T. R. Abbott	99, 277
Roofing-composition	R. D. Sanders	101, 314
Roofing-composition	H. L. Davis	105, 434
Roofing-composition	W. H. Jones	107, 382
Roofing-composition	J. P. Godfrey	109, 002
Roofing-composition	A. Ruttkay	109, 254
Roofing-composition, Machine for making	I. L. G. Rice	104, 887
Roofing-compound	W. M. Stuart	102, 061
Roofing-compound	L. A. Wilder	103, 403
Roofing, Compound to be applied to	T. E. Wood	101, 071
Roofing-fabric	D. W. Denton	108, 334
Roofing-material	P. Werni	99, 267
Roofing-material	M. G. Balfour	101, 970
Roofing-material	J. H. Cole	110, 342
Roofing, Metal	S. Hughes	103, 887
Roofing, Metal	T. Carter	104, 553
Roofing, Metallic	T. N. Hiecoex	100, 148
Roofing, Metallic	J. Siddons	102, 441
Roofing, Metallic	J. B. Davis	104, 713
Roofing, metallic, Non-corrosive	O. T. May	99, 216
Roofing, pavement, &c., Composition for	E. J. De Smedt	100, 269
Roofing, paving, &c., Composition for	E. J. De Smedt	101, 594
Roofing-plates, metallic, Machine for rolling	G. A. Reynolds	104, 647
Roofing, Scaffold-bracket for	J. R. Kennett	109, 221
Roofing, Sheet-metal	J. Diehl	99, 656
Roofing, Tin	B. Coddington	107, 664
Roof, Metallic	W. M. Barry	107, 649
Roof-protector, Metal	G. D. Volkmar	102, 451
Roof, Railway-car	B. F. Picket	102, 316
Roofs, composition, Manufacture of	C. F. Hinman	99, 038
Roofs, Guard for	S. R. Hathorn	106, 560
Roofs, metal, Machine for seaming	J. D. James, jr	100, 414
Roofs, Paint or coating for	D. D. Pennoyer	99, 229
Roofs, ships' bottoms, &c., Composition felting for covering	T. R. Abbott	103, 536
Roof, Thatched	L. Foster	99, 304
Roots, &c., Mill for powdering	H. D. Garrison	109, 196

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Rope-holder .....	C. W. Huson .....	109, 412
Rope, Machine for making .....	B. S. and J. B. Halo .....	98, 491
Rope, Machine for making .....	W. G. Pike .....	108, 387
Ropes, Chock for holding .....	D. D. Brown .....	108, 101
Rope, Skipping .....	S. P. Coon .....	98, 928
Ropes, Machine for tightening .....	A. Paget .....	105, 240
Rope-walker, Automatic .....	H. A. House .....	109, 618
Rose for door-knobs .....	W. T. Munger .....	100, 314
Rose for door-knobs .....	J. J. Henderson .....	109, 409
Rosette .....	J. W. Dayton .....	103, 849
Rosette for bridle .....	J. O'Brien .....	108, 725
Rosette for bridles .....	J. O'Brien .....	102, 579
Rosin-oil, Manufacture of .....	J. Treat .....	100, 953
Rossing-machine .....	J. H. Lufberg .....	102, 288
Rouging-roll .....	D. Eynon .....	102, 670
Roulette .....	A. H. Crozier and M. Taylor .....	107, 882
Roulette, Parlor .....	A. Marais .....	105, 468
Rounding and dressing irregular and regular forms, Machine for .....	H. A. Gore .....	104, 578
Row-boats, Seat for .....	W. Brown .....	107, 439
Rubber-cement .....	H. J. Ball .....	109, 570
Rubber-connection for mosquito-net frames .....	U. W. Armstrong and I. Heeney .....	100, 966
Rubber to wringer-shafts, Attaching .....	S. R. Kenyon .....	106, 175
Rubber with wood, Process of uniting .....	F. B. Shearer .....	107, 729
Rudder, Boat .....	W. C. Law .....	102, 559
Rudder-collar .....	S. Leach .....	100, 419
Rudder for vessels .....	S. G. Coleman .....	99, 639
Rule and calculator .....	N. Ocherlund .....	102, 034
Rule and pattern for tailors, Graduated .....	W. E. Smith .....	101, 390
Rule, bevel, square, and divider, Combined .....	G. G. Burgess .....	109, 868
Rule, level, clinometer, &c., Combined .....	E. A. Goodes .....	104, 577
Ruling and copying, Machine for .....	G. McHenry .....	107, 795
Ruling-device .....	E. H. Robinson .....	98, 710
Ruling-machine .....	G. W. Casilear .....	99, 758
Ruling-machine .....	W. Hickok .....	103, 743
Ruling-machine .....	J. McAdams .....	104, 047
Ruling-machine .....	J. Stewart .....	109, 267
Ruling-machines, Pen for .....	W. O. Hickok .....	107, 047
Rule, Printers' .....	C. Reuter .....	98, 799
Running-gear for carriages, Elastic .....	G. E. Garretson .....	109, 608
Running-gear, Iron .....	A. Ball .....	105, 411
S.		
Saccharine and other solutions, Apparatus for evapo- rating .....	A. Tolles .....	98, 816
Sad and crimping iron .....	C. Hyatt .....	106, 164
Saddle .....	G. Horter .....	100, 894
Saddle-bag .....	G. W. Elliott .....	98, 857
Saddle, Harness .....	V. Borst .....	109, 108
Saddle, Riding .....	E. Spedden .....	100, 565
Saddle, Riding .....	G. Horter .....	105, 080
Saddle, Side .....	F. Smith .....	105, 734
Saddle, Sweat-cloth for .....	R. Allison .....	103, 276
Saddle-tree .....	I. Landis .....	99, 447
Saddle-tree, Harness .....	P. Wiedersum .....	107, 843
Sad-iron .....	M. F. Potts .....	103, 501
Sad-iron .....	J. Conner .....	105, 649
Sad-iron .....	W. Webster .....	106, 524
Sad-iron .....	T. G. Eiswald .....	109, 306
Sad-iron handle .....	J. Gleason .....	105, 192
Safe .....	W. K. Marvin .....	98, 608
Safe .....	L. F. Whiting and F. Smith .....	100, 093
Safe .....	D. O. Paige .....	100, 184
Safe .....	J. Weimer .....	101, 245
Safe .....	O. Marland .....	101, 894
Safe and vault .....	T. J. Sullivan .....	103, 683
Safe, Burglar fire-proof .....	W. McFarland .....	100, 781
Safe, Burglar-proof .....	E. M. Hendrickson .....	99, 085
Safe, Burglar-proof .....	J. M. Ewing .....	100, 741
Safe, Burglar-proof .....	J. Farrel .....	107, 021
Safe-doors, Mechanism for opening and closing .....	J. Farrel .....	107, 023
Safe, fire-proof, Filling for .....	J. Farrel .....	107, 022
Safe, Iron .....	L. Lillie .....	108, 494
Safe, Meat .....	G. L. Michael .....	101, 146
Safe, Milk .....	J. H. Bush .....	106, 117
Safe, provision, Rotary .....	A. Sly and S. S. Ford .....	99, 606
Safes and vaults from burglars, Protecting .....	W. M. and A. Clark .....	106, 324
Safes, bank-vaults, &c., Heat-resisting material for .....	T. Hyatt .....	100, 632
Safes, Bolt-work and doors for .....	J. C. Hintz .....	98, 494
Safes, Electro-magnetic apparatus for protecting .....	W. Dunbar and C. C. Rowell .....	109, 193

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Safes, Lock-spindle for .....	A. G. Burton .....	99, 400
Safes, vaults, or doors, Construction of .....	J. Sargent .....	98, 714
Safety-attachment for steam-boilers .....	N. Wiard .....	100, 479
Safety-box for bank-porters .....	W. Wiler .....	99, 736
Safety-cap for cans .....	H. C. Alexander .....	104, 402
Safety-match, Manufacture of .....	L. O. P. Meyer .....	101, 641
Safety-hatch for buildings .....	G. N. Creamer .....	100, 264
Safety-socket for whips, umbrellas, billiard-cues, &c. ....	J. W. Whiteman .....	102, 635
Safety-swivel .....	R. Richards .....	109, 666
Safety-truck and car-brake .....	W. C. Smith .....	107, 115
Safety-valve or vent, Barrel .....	B. F. Evans .....	109, 813
Safe, vaults, &c., Steam-protector for .....	J. A. Robertson .....	101, 044
Sails, Apparatus for reefing .....	N. W. Rich .....	102, 158
Salt brine, Evaporating .....	C. A. Shepard .....	109, 555
Salt brines and other liquids, Evaporating .....	J. Heim .....	100, 528
Salt, Machine for packing .....	J. McGrew .....	105, 586
Salt, Manufacture of .....	J. R. Buchanan .....	107, 866
Salt, Manufacture of .....	D. Reynolds and J. W. Paige .....	109, 546
Salt, Process and apparatus for the manufacture of .....	D. Reynolds .....	99, 949
Salt, Purifying brine for the manufacture of .....	F. M. Smith .....	108, 198
Salt-water and other liquids, Evaporating .....	F. A. Morley .....	107, 523
Salve, Healing .....	R. Dobbins .....	109, 599
Sand-paper holder .....	J. Barker .....	102, 474
Sand-papering machine .....	P. Hufeland .....	103, 191
Sand-papering machine .....	S. F. Smith .....	110, 165
Sand-screen for iron tube-wells .....	R. M. Morrill .....	101, 148
Sand, Washing and transporting .....	D. D. Mallory .....	109, 030
Sap-bucket .....	C. C. Post .....	107, 497
Sap-feeder to sugar-evaporators .....	G. D. Chandler .....	107, 448
Sap to evaporating pans, Device to regulate the flow of .....	J. Thomas .....	107, 124
Sash and blind machine .....	R. D. Hobart .....	106, 937
Sash-balance .....	M. R. Green .....	101, 007
Sash-balance .....	W. Damerel .....	102, 658
Sash-balance .....	J. C. M. Hamilton .....	105, 330
Sash-balance .....	C. R. Rand .....	110, 159
Sash balance and lock .....	W. H. Doe .....	102, 379
Sash-cord fastener .....	C. Gies .....	108, 131
Sash-fastener .....	J. S. McGlumphy .....	101, 486
Sash-fastener .....	T. R. Timby .....	102, 622
Sash-fastener .....	H. Perkins .....	104, 344
Sash-fastener .....	H. Fickel .....	106, 928
Sash-fastener .....	J. G. Nicolay .....	108, 171
Sash-fastener .....	P. T. Share .....	108, 194
Sash-fastener .....	W. H. Thomas .....	108, 210
Sash-fastener .....	W. Gorman .....	108, 778
Sash-fastening .....	W. B. Snyder and R. Hubbard .....	103, 938
Sash-holder .....	D. R. Kline .....	99, 325
Sash-holder .....	C. Bean .....	99, 815
Sash-holder .....	E. K. Breckenridge .....	99, 827
Sash-holder .....	C. W. Rockhold .....	100, 075
Sash-holder .....	R. B. Hugunin .....	100, 486
Sash-holder .....	J. Wilkinson .....	100, 577
Sash-holder .....	A. Van Patten and J. F. Kelsey .....	100, 694
Sash-holder .....	T. H. Davis .....	101, 715
Sash-holder .....	R. L. Sibbet .....	102, 604
Sash-holder .....	W. A. Eisenhower .....	102, 667
Sash-holder .....	N. J. Meigs .....	103, 223
Sash-holder .....	R. B. Hugunin .....	104, 314
Sash-holder .....	J. F. Zacharias .....	104, 395
Sash-holder .....	N. Y. Shaw .....	104, 892
Sash-holder .....	A. C. Manning .....	104, 974
Sash-holder .....	J. Hoisinger .....	105, 206
Sash-holder .....	G. W. Bishop .....	105, 299
Sash-holder .....	W. E. Phelps .....	105, 976
Sash-holder .....	J. A. Printz .....	106, 279
Sash-holder .....	C. S. Bonney .....	107, 157
Sash-holder .....	A. D. Millard .....	107, 281
Sash-holder .....	H. C. Hunt .....	107, 498
Sash-holder .....	G. W. Wheat .....	107, 575
Sash-holder .....	W. F. Kells .....	107, 691
Sash-holder .....	P. W. Greenwood .....	107, 773
Sash-holder .....	G. King .....	108, 155
Sash-holder .....	H. B. Swartz .....	108, 204
Sash-holder .....	G. W. Bishop .....	108, 438
Sash-holder .....	E. D. Slater .....	108, 642
Sash-holder .....	C. B. Clark .....	108, 968
Sash-holder .....	E. H. Wheeler .....	109, 362
Sash-holder .....	G. F. Beardsley .....	109, 374
Sash-holder .....	A. J. Kramer .....	110, 248
Sash holder and balance .....	G. W. Bishop .....	103, 547

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sash-lock	A. Cooper	102, 227
Sash-lock	J. Hughes	109, 516
Sash-lock	E. L. Brown	109, 801
Sash-lock	C. Sholl	110, 078
Sash-marker	G. M. Nickason	102, 700
Sash, Machine for making	S. C. Ellis	100, 610
Sash-pulley	O. S. Garretson	101, 854
Sash, Relishing-machine for tenoning	G. L. Sullivan and E. Lippincott	109, 075
Sash-rope guide	W. W. Fifield	98, 752
Sash stop and holder	J. P. Lubar	98, 872
Sash-supporter	G. F. Joyce	102, 827
Sash-supporter	R. B. Hugunin	110, 365
Sash-weight, Folding	W. Ferguson and J. Anderson	107, 468
Saturating fibrous material with powdered substances for bearings and packing.	E. D. Murfey	108, 285
Saucepan	F. Schifferle	107, 818
Saucepan-handle	J. Kinzer	103, 055
Sausage-stuffer	H. Whaler, H. Metz, and L. Heinze	108, 070
Sausage-stuffer	J. Mickley and J. E. Hartman	109, 831
Sausage-stuffer and lard-press	A. Bishop	106, 250
Saw	G. B. Goodnow	101, 251
Saw	C. V. Littlepage	102, 286
Saw	J. E. Emerson	102, 520
Saw	H. Broomell and A. W. Wilson	102, 653
Saw	S. W. Shaller	105, 261
Saw	G. Maulick	105, 349
Saw	C. Mitzelfield	106, 187
Saw	W. E. Brooke	107, 593
Saw	J. Phillips	107, 808
Saw	H. Disston	102, 011
Saw	W. F. Milliman	108, 040
Saw	J. Smith	108, 059
Saw-blades, Machine for grinding	C. J. Gardner	103, 775
Saw-buck	L. D. Howard	103, 335
Saw-buck	P. Tyler	104, 230
Saw, circular, Guide for	A. Middlebrook	106, 387
Saw-clamp	P. Merrill	101, 754
Saw, Cross-cut	P. Longwell	105, 701
Saw-dressing machine	J. Mallory	107, 270
Saw filing and setting machine	H. D. Chance and D. Rishe	107, 872
Saw-filing instrument	G. E. Norris	103, 075
Saw-filing machine	R. H. Strong	101, 938
Saw-filing machine	C. Z. Vanderslice and B. L. Churchill	103, 529
Saw-filing machine	H. H. Mellen	105, 103
Saw-filing machine	W. Tucker	106, 431
Saw for making stuffing for upholstering	G. W. Marble	105, 469
Saw for sawing fellies	G. Steck	104, 074
Saw-frame	T. H. Rollins	99, 596
Saw-frame	C. Mayer	101, 481
Saw-frame	E. Andrews	103, 700
Saw-frame	W. Hankin	104, 847
Saw-frame	E. M. Boynton	105, 032
Saw-grinding machine	G. Walker	100, 059
Saw-gummer	G. Munday	100, 312
Saw-gummer	A. B. Douglas	103, 726
Saw gumming and sharpening machine	E. W. Phelps	104, 639
Saw-handle	R. Gates	98, 863
Saw-handle	W. W. Richardson	99, 110
Saw-handle	W. Clemson	106, 123
Saw-hanging	L. Morrison and A. G. Harms	101, 492
Saw-hanging	S. G. Mason	104, 613
Saw-hangings, Muley	D. Cilley	105, 174
Saw, Jig	T. Blandin	104, 410
Sawing-machine	J. D. Culver	98, 568
Sawing-machine	D. R. Pratt	98, 628
Sawing-machine	C. W. Saladee	98, 713
Sawing-machine	S. C. Howe	98, 968
Sawing-machine	L. Bach and L. C. Christlip	99, 131
Sawing-machine	J. B. Schenck	99, 600
Sawing-machine	J. Walling	100, 471
Sawing-machine	A. G. Park	100, 660
Sawing-machine	H. D. Gillespie	101, 107
Sawing-machine	C. G. Wills	101, 397
Sawing-machine	A. and H. Goodman	102, 112
Sawing-machine	A. Smith	102, 606
Sawing-machine	M. E. Dean	102, 921
Sawing-machine	P. A. Myers	103, 225
Sawing-machine	O. C. Smith and T. S. Doll	103, 250
Sawing-machine	B. Little and J. B. Lundberg	103, 349
Sawing-machine	G. P. Hill and E. C. Dow	103, 459
Sawing-machine	N. Stilwell	103, 677

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sawing-machine	G. W. Boll	103, 769
Sawing-machine	J. Chase	103, 843
Sawing-machine	J. Kauffmann	103, 892
Sawing-machine	J. Strausbaugh, jr.	104, 077
Sawing-machine	M. Sweney	104, 079
Sawing-machine	F. Rhoad	104, 998
Sawing-machine	J. A. Wood	105, 023
Sawing-machine	L. D. Webber	105, 281
Sawing-machine	M. N. Clark	105, 647
Sawing-machine	A. Renetzky	105, 848
Sawing-machine	W. M. Cochran	105, 910
Sawing-machine	J. A. Elston	105, 928
Sawing-machine	J. T. Plass	107, 195
Sawing-machine	J. T. Baggs	107, 211
Sawing-machine	G. W. Lombard	103, 370
Sawing-machine	G. W. Kearns	108, 797
Sawing-machine	J. H. Curell	108, 886
Sawing-machine	D. S. Shanabrook	109, 146
Sawing-machine	J. C. Clime	109, 178
Sawing-machine	R. J. Poston	109, 343
Sawing-machine	F. D. Smith	109, 351
Sawing-machine	J. R. Lambert, sr., and J. R. Lambert, jr.	109, 426
Sawing-machine	C. H. Mayo	109, 436
Sawing-machine	D. Heller	109, 900
Sawing-machine	P. Johnson	109, 910
Sawing-machine, Band	J. Richards and W. H. Thorne	104, 770
Sawing-machine, Horse-power	A. Trone	103, 394
Sawing-machine, Stone	C. Bateman	106, 308
Saw-mill dog	J. S. Brown	106, 655
Saw-mills, Head-block for	G. Selden	107, 728
Saws, circular, Method of manufacturing	T. Taylor	101, 942
Saws, concave circular, Process for making	T. S. Disston	109, 881
Saw, Scroll	M. G. Ogden	105, 120
Saw, Scroll	N. B. Hadley	106, 153
Saw, Scroll	R. McChesney	108, 921
Saw, Scroll	A. M. Schilling	109, 060
Saws, cross-cut, Handle for	E. M. Boynton	99, 825
Saws, cross-cut, Machine for jointing the cleaning-teeth of.	J. H. Robsen	102, 169
Saw-set	H. A. Harris	99, 889
Saw-set	E. Y. Clark	101, 982
Saw-set	J. Morton	103, 359
Saw-set	J. T. Dickey	103, 851
Saw-set	H. K. Porter	103, 925
Saw-set	M. T. Klahre	104, 467
Saw-set	W. A. Smith	107, 733
Saws, Machine for sharpening	J. A. Borthwick	105, 543
Saws, Machine for sharpening the teeth of	H. J. Perkins	105, 244
Saws, Packing-case for	H. Disston	102, 923
Saw-table	C. H. Douglas	107, 346
Saw-table for sawing irregular forms	G. A. Watkins	106, 006
Saw-teeth	G. L. Hiles	103, 045
Saw-teeth	C. V. Littlepage	105, 345
Saw-teeth	I. and T. Byrd, jr.	110, 430
Saw-teeth, Blank for	J. E. Emerson	108, 990
Saw-teeth, Detachable	P. J. Hogan	102, 400
Saw-teeth, Machine for elongating and spreading	J. Orm	106, 978
Saw-teeth, Machine for grinding	W. Clemson	104, 830
Saw-tooth swage	G. B. Pattee	110, 390
Saw-swage	S. Kinney	98, 695
Saw-swage	W. Clemson	101, 099
Saw-swage	L. W. Pond	102, 318
Saw-swaging machine	L. W. Pond	102, 319
Scale-beam	J. H. Usher	108, 654
Scale for showing weight and price	W. H. Phinney	106, 869
Scale, Log-measuring	L. Smith	804, 368
Scale, Platform	C. C. Lyman	103, 478
Scale, Platform, for hay or cattle	D. H. Dewey	99, 169
Scale, Platform	V. Vincent	105, 522
Scale, Platform	M. Kennedy	106, 174
Scale, Platform	H. Wood	107, 137
Scale, Spring	J. Jochum	104, 160
Scale, weighing, Recording	H. Fairbanks	107, 240
Scale, weighing, Self-registering	H. Fairbanks	107, 239
Scale, Tailors'	W. J. Cummins	102, 505
Scale, Weighing	D. Buoy	99, 148
Scale, Weighing	T. Fairbanks	102, 791
Scale, Weighing	A. Assmann	103, 541
Scale, Weighing	G. W. Dickinson	106, 560
Scale, Weighing	W. H. McCormick	108, 807
Scale, weighing, Platform	R. J. McKeone	110, 261

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Scales, weighing, Registering .....	H. Paddock .....	107, 266
Scales, weighing, Spring .....	J. V. Mathevit .....	107, 272
Scaffold .....	G. W. Baker .....	98, 908
Scaffold .....	H. Swineford .....	99, 492
Scaffold .....	G. W. Wills .....	99, 799
Scaffold .....	E. R. Holzer .....	102, 542
Scaffold and ladder .....	J. E. Ranch .....	99, 706
Scaffold-bracket for roofing .....	J. R. Kneunett .....	109, 221
Scaffold, Extension .....	J. Hughes .....	109, 012
Scaffolding .....	A. R. and B. F. Monson .....	105, 248
Scaffolding .....	J. V. Cook and E. J. Crossman .....	106, 783
Scaffold-supporter .....	D. B. Hay .....	102, 037
Scaffold, Workman's .....	W. H. Berger .....	103, 546
Scientific playing-cards .....	C. Goodwin .....	99, 561
Scissors-sharpener .....	C. A. Foster .....	102, 106
Scissors-sharpener .....	N. Belcher .....	103, 705
Scoop, Excavating .....	O. P. Knefflin .....	109, 132
Scoop, Vegetable .....	J. F. Unglish .....	100, 822
Scouring and washing fabrics .....	W. and F. Bates .....	104, 818
Scrap and other iron, Working .....	G. W. Jones .....	99, 574
Scraper and ditcher, Road .....	G. Clark .....	108, 238
Scraper, Box .....	J. R. Bailey .....	105, 766
Scraper, Box .....	J. R. Brown .....	108, 321
Scraper, Box .....	F. B. Hill .....	109, 008
Scraper, Cotton .....	J. Lytch .....	104, 396
Scraper, Earth .....	S. S. Owen .....	106, 865
Scraper or cultivator, Cotton .....	T. J. Harris .....	103, 877
Scraper, Road .....	R. Hamilton .....	98, 957
Scraper, Road .....	J. Howland .....	98, 969
Scraper, Road .....	C. Little .....	99, 921
Scraper, Road .....	J. C. Evans .....	102, 102
Scraper, Road .....	P. M. Stephens .....	102, 444
Scraper, Road .....	D. B. Jones .....	104, 162
Scraper, Road .....	R. Hamilton .....	105, 567
Scraper, Road .....	W. T. Nichols .....	109, 440
Scraper, Road .....	D. L. Shepard .....	102, 768
Scraper, road, Revolving .....	E. M. Doty, J. L. Little, and P. A. Schmidler .....	106, 674
Scraper, Sugar-cane .....	A. Landry .....	106, 839
Scrap-iron, Furnace for smelting .....	A. Ott .....	107, 712
Screen .....	C. Lockwood .....	104, 173
Screen-attachment for windows .....	G. Reed, W. C. Hoagland, and J. J. Newson .....	102, 154
Screen, Coal .....	E. Thomas .....	109, 969
Screen for photograpers, Movable .....	E. J. Foss .....	105, 665
Screer, Photographic .....	J. A. Anderson .....	100, 099
Screen, Spawning .....	A. S. Collins .....	105, 176
Screens, Rice .....	W. C. Chapman .....	104, 112
Screw and screw-driver .....	A. S. Apgar .....	101, 207
Screw and nut for clamps, &c. ....	J. Add .....	98, 656
Screw-blanks, Machine for nicking .....	A. Wood .....	105, 873
Screw-clamp for piano-pins .....	C. M. Lindsay .....	107, 391
Screw-cutting die .....	N. Nelson .....	108, 815
Screw-cutting machine .....	E. Kaylor .....	106, 592
Screw-driver .....	D. Drummond .....	98, 933
Screw-driver .....	W. H. Martyn .....	99, 781
Screw-driver .....	S. Hart .....	100, 757
Screw-driver .....	A. Newton .....	108, 383
Screw-eyes, wire, Machine for bending .....	N. C. Perry .....	106, 720
Screw for soles and heels of shoes .....	L. H. Whitney .....	107, 143
Screw-pile .....	T. W. H. Mosley .....	109, 337
Screw-piling .....	C. H. Parker .....	101, 379
Screw-propeller .....	C. G. Toense .....	100, 216
Screw-propeller .....	H. Hirsch .....	102, 399
Screw-propeller .....	C. Harlan and C. Gautschi .....	102, 645
Screws and screw nails, Machine for making .....	R. Bocklen .....	109, 171
Screws, Machine for grinding .....	E. and C. Chambers, Jr .....	101, 431
Screws, Machine for nicking .....	N. S. Clement .....	101, 228
Screw-spike for railroads .....	A. C. and I. L. Dunn .....	108, 966
Screw-tap .....	C. L. Fehrenson .....	98, 943
Screw-threading machine .....	T. T. Prosser .....	103, 776
Screw-threads, Device for cutting .....	Z. S. Ogden .....	108, 933
Screw-threads, Machine for cutting and drilling .....	J. J. Grant .....	107, 610
Scroll-case for water-wheels .....	J. Chase .....	98, 741
Scroll-saw .....	G. M. Nickason .....	100, 551
Scroll-saw .....	R. McChesney .....	101, 897
Scroll-sawing machine .....	E. A. Tripp .....	101, 778
Scrubber and cleaner .....	W. G. Rhodchamel .....	104, 886
Scrubber and mop .....	W. P. Walker and E. H. Leseman .....	110, 409
Scrubbing-brush and mop-wringer .....	E. Rees .....	102, 865
Scrubbing-brush, Combined .....	E. K. Wood .....	106, 644



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Scythe.....	H. C. Brown.....	106, 541
Scythe-fastening.....	S. U. King.....	110, 474
Scythes, Wrapping, for transportation.....	L. Stimson.....	100, 949
Seal for metal straps on boxes.....	J. P. Herron.....	107, 370
Seal, Hydraulic.....	J. H. Sutton.....	105, 277
Sealing-apparatus for pipe joint-couplings.....	C. Perkes.....	101, 501
Seal-lock.....	F. W. Brooks.....	98, 917
Seal-lock.....	G. Ulman.....	100, 568
Seal-lock.....	D. A. McNair.....	102, 696
Seal-lock.....	G. L. Kitson, J. F. Laning, and J. Bendor.....	104, 038
Seal-lock.....	E. Clemons.....	106, 255
Seal-lock.....	J. Corbett and F. W. Brooks.....	109, 718
Seal, Metallic.....	B. Briscoe.....	110, 195
Seal, Metallic.....	A. B. Small.....	106, 734
Seaming sheet-metal cans, Machine for.....	W. A. Wicks.....	105, 398
Seat and cap for tie and sill-plate.....	P. S. Clinger.....	101, 825
Seat, Buggy.....	C. Haas.....	104, 583
Seat, Car.....	W. Wells.....	106, 297
Seat, Carriage.....	S. Toomey.....	98, 721
Seat, carriage, Adjustable.....	A. Wright.....	101, 959
Seat, Chair.....	O. A. Bingham.....	101, 090
Seat, Chair.....	C. D. Smith.....	101, 671
Seat, Chair.....	B. F. Wright.....	104, 243
Seat, Chair.....	G. A. Watkins.....	107, 136
Seat, Chair.....	G. A. Watkins.....	107, 137
Seat, Counter.....	D. H. Krauser.....	102, 947
Seat-cushion.....	R. A. Kendall.....	98, 778
Seat-fastener.....	L. Brown.....	100, 010
Seat, Folding.....	C. A. French.....	106, 805
Seat, Folding.....	G. W. King.....	105, 222
Seat for cars, &c.....	J. Casseday.....	100, 116
Seat for harness-saddles.....	P. Burns.....	103, 034
Seat for railway-cars, Reversible.....	T. J. Close.....	102, 498
Seat for row-boats.....	W. Brown.....	107, 439
Seat for vehicles.....	P. F. Dean.....	104, 714
Seat for vehicles.....	W. H. Elliott.....	105, 321
Seat for vehicles.....	D. R. Allen.....	109, 368
Seat-frame for vehicle.....	Jesse W. Dann.....	103, 024
Seat-guard for hobby-horses.....	W. L. Williams.....	110, 527
Seat-hinge for school desks and settees.....	N. O. Tiffany.....	110, 402
Seat, Portable-bath.....	A. P. Young.....	106, 445
Seat, Railway-car.....	E. Miller.....	101, 755
Seat, Railway-car.....	J. I. Pease.....	106, 615
Seat, Railway-car.....	W. H. Soper.....	106, 739
Seat, Railway-car.....	J. M. O'Neill.....	106, 953
Seats, Automatically operated water-closet.....	P. W. Davis.....	106, 132
Seat, School.....	C. G. Harrington and D. Mills.....	105, 676
Seat, School.....	G. W. Hildreth.....	107, 048
Seat, School-desk.....	A. S. Vorse.....	104, 906
Seat, Shifting carriage or buggy.....	S. W. Beach.....	104, 248
Seat, Spring.....	D. F. Haasz.....	102, 678
Seat, Spring, and bed-bottom.....	M. Flanigan.....	102, 386
Seat, Turn-up, for churches, &c.....	J. P. Tibbets.....	110, 512
Seat, Wagon.....	C. F. Hollenbeck.....	107, 684
Seat, wagon, Sliding.....	R. O. Knowles.....	105, 955
Seat, wagon, Spring.....	P. Burress.....	100, 370
Secretary-safe.....	T. J. Sullivan.....	105, 512
Sediment-agitator for steam-boilers.....	B. W. Reynolds.....	109, 453
Sediment-chamber for lamp-posts.....	G. C. Bovey.....	99, 527
Seed and guano distributor.....	E. Blackledge.....	107, 436
Seed-dropper.....	J. F. Hanson and J. E. Calloway.....	103, 454
Seeder and cultivator combined.....	N. E. Allen, I. B. Record, J. Rood, and J. Hayden.....	101, 342
Seeder and cultivator combined.....	C. Alvord.....	98, 542
Seeder and cultivator combined.....	J. A. Hall.....	98, 956
Seeder and cultivator combined.....	W. D. Stroud.....	101, 178
Seeder and cultivator combined.....	J. T. Trowbridge.....	104, 515
Seeder and cultivator combined.....	H. Haines.....	106, 055
Seeder and cultivator combined, Broadcast.....	J. E. Fargo.....	110, 447
Seeder and fertilizer combined.....	W. B. Myers.....	106, 500
Seeder and harrow, Combined.....	J. E. and C. C. Halsted.....	103, 452
Seeder and hay-tedder, Combined.....	J. House.....	101, 266
Seeder, Broadcast.....	W. S. Archer.....	100, 100
Seeder, Broadcast.....	J. C. Kurtz.....	101, 136
Seeder, planter, cultivator, and harrow, Combined.....	J. K. McClure.....	105, 229
Seed, for planting, Mode of preparing.....	H. Lassing.....	99, 094
Seed-marker.....	S. D. Fisher.....	106, 042
Seed-planter and fertilizer-distributor.....	J. Arrington.....	100, 001
Seed-planter and guano-distributor.....	W. L. Trayuham.....	108, 213
Seed-planter, Hand.....	J. T. Macomber.....	101, 480
Seeding-machine.....	J. Ingels.....	102, 405

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Seeding-machine.....	H. Koeller.....	102, 684
Seeding-machine.....	C. H. Cowles.....	103, 022
Seeding-machine.....	J. D. Harrison.....	103, 200
Seeding-machine.....	J. H. Thomas and P. P. Mast.....	105, 386
Seeding-machine.....	D. C. Turner.....	105, 389
Seeding-machine.....	A. Button.....	106, 546
Seeding-machine.....	D. E. McSherry.....	106, 602
Seeding-machine.....	J. H. Jones.....	107, 056
Seeding-machine.....	S. M. Firey.....	109, 503
Seeding-machine, Attachment to.....	G. B. St. John.....	101, 537
Seeding-machines, Fertilizer-attachment to.....	J. F. Keller.....	105, 811
Seed-sower and cultivator, Combined.....	H. L. Hall.....	109, 613
Seed-stripper.....	M. J. W. Stivers.....	104, 508
Self-cleaning filler for hydrants.....	J. Raible, M. Reis, and J. Ritter.....	99, 002
Self-protector.....	D. P. Cook.....	104, 117
Selvages on machine-knit stockings, &c., Method of producing.....	H. A. House.....	101, 016
Semolina and flour, Manufacture of.....	G. A. Buckholtz.....	108, 163
Semolina and flour, Manufacture of.....	G. A. Buckholtz.....	108, 102
Separating the hair from the warp in hair-cloth, Process of.....	D. Whiteley.....	109, 857
Separator.....	B. H. Snively.....	101, 550
Separator of thrashing-machine.....	A. Wissler.....	108, 546
Separator to be used in distilling liquors.....	G. W. Shaw.....	100, 196
Setting-boiler.....	C. Neames.....	109, 039
Settee, bed, and table.....	C. F. Kramer.....	105, 094
Sewage, Utilizing.....	G. W. Wigner.....	108, 604
Sewer-catch box-cover.....	H. Smith, jr.....	109, 067
Sewing and other machinery, Treadle for.....	G. B. Kirkham.....	107, 921
Sewing and other machines, Mode of operating.....	S. C. Foster.....	105, 932
Sewing and other machines, Treadle for.....	B. C. Pole.....	107, 717
Sewing-machine.....	H. A. House.....	98, 771
Sewing-machine.....	P. and W. C. Bramwell.....	99, 055
Sewing-machine.....	J. A. Davis.....	99, 067
Sewing-machine.....	J. Bennor.....	99, 133
Sewing-machine.....	W. Black.....	99, 283
Sewing-machine.....	A. Porter.....	99, 704
Sewing-machine.....	W. T. Smith.....	99, 743
Sewing-machine.....	N. Meyers.....	99, 783
Sewing-machine.....	W. O. Grover.....	100, 139
Sewing-machine.....	T. Lamb.....	101, 137
Sewing-machine.....	R. Lawyer and J. C. Gasten.....	101, 140
Sewing-machine.....	J. I. H. Hirschbühl.....	101, 265
Sewing-machine.....	W. S. Mead.....	101, 292
Sewing-machine.....	G. F. Kendall.....	101, 887
Sewing-machine.....	G. A. Smith and E. L. Miller.....	102, 170
Sewing-machine.....	W. Cooney.....	102, 226
Sewing-machine.....	F. H. Brown.....	102, 366
Sewing-machine.....	M. L. Gorbam.....	102, 535
Sewing-machine.....	R. H. Peabody.....	102, 586
Sewing-machine.....	G. Rehfuss.....	102, 710
Sewing-machine.....	A. Moltz.....	103, 070
Sewing-machine.....	L. W. Stockwell.....	103, 254
Sewing-machine.....	M. F. Geraghty.....	103, 444
Sewing-machine.....	J. J. Cobb.....	103, 964
Sewing-machine.....	W. B. Bartram.....	104, 247
Sewing-machine.....	H. P. Henriksen.....	104, 530
Sewing-machine.....	T. L. Melone.....	104, 871
Sewing-machine.....	T. W. Pepper.....	105, 123
Sewing-machine.....	T. Bletcher.....	105, 631
Sewing-machine.....	C. B. True.....	105, 741
Sewing-machine.....	J. N. McLean.....	105, 961
Sewing-machine.....	J. V. Coon.....	106, 032
Sewing-machine.....	J. Bennor.....	106, 249
Sewing-machine.....	M. M. Barnes.....	106, 307
Sewing-machine.....	J. L. Lake.....	106, 943
Sewing-machine.....	C. F. Harlow.....	107, 041
Sewing-machine.....	C. W. Godown.....	107, 677
Sewing-machine.....	T. J. Harper.....	108, 020
Sewing-machine.....	A. Komp.....	108, 033
Sewing-machine.....	W. A. Rayer and W. S. Lincoln.....	108, 827
Sewing-machine.....	W. R. Landfear.....	109, 427
Sewing-machine.....	C. Parham.....	109, 443
Sewing-machine.....	I. W. Lamb.....	109, 632
Sewing-machine.....	J. Palmer.....	109, 655
Sewing-machine.....	T. A. Macaulay.....	109, 828
Sewing-machine.....	L. W. Lathrop.....	110, 250
Sewing-machine and its supporting table.....	M. Chase.....	105, 548
Sewing-machine, Apparatus for operating.....	V. Giroud.....	108, 902
Sewing-machine, Attachment for.....	S. M. Moschowitz.....	105, 715
Sewing-machine, Binding-attachment for.....	W. N. Martin.....	109, 366

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sewing-machine, Bobbin for .....	J. B. Herreshoff .....	100, 627
Sewing-machine, Button-hole .....	I. Nasch .....	104, 630
Sewing-machine, Button-hole .....	W. Chicken .....	107, 001
Sewing-machine, Button-holing and overseaming attachment for .....	E. Howard and W. H. Jackson .....	103, 745
Sewing-machine case, Lock for .....	H. O. Nauen .....	107, 401
Sewing-machine caster .....	J. B. Sargent .....	103, 782
Sewing-machine cover .....	P. Uhlinger and J. Doering .....	104, 373
Sewing-machine, Cover for .....	E. F. French .....	98, 485
Sewing-machine, Cover for .....	E. F. French .....	103, 863
Sewing-machine, Creasing-attachment for .....	J. A. Davis .....	106, 789
Sewing-machine, Device for .....	J. S. Warner .....	99, 122
Sewing-machine, Embroidering-attachment for .....	W. T. and A. Johnston .....	105, 087
Sewing-machine, Embroidering-attachment for .....	A. W. Johnson .....	108, 150
Sewing-machine, Feeding-mechanism for .....	G. A. Fairfield .....	107, 019
Sewing-machine for boots and shoes .....	D. Mills .....	101, 644
Sewing-machine for making gloves .....	B. Rudolph .....	99, 481
Sewing-machine for making puffings .....	E. D. Gird .....	103, 816
Sewing-machine, Guide for .....	J. S. Alter .....	102, 469
Sewing-machine, Guide for .....	W. C. Dodge .....	103, 159
Sewing-machine, Hemmer for .....	A. W. Boomer and J. P. Haskins .....	102, 082
Sewing-machine, Hemmer for .....	M. C. Hawkins .....	103, 611
Sewing-machine, Hemmer for .....	M. Harris .....	106, 155
Sewing-machine, Needle and arm for .....	M. P. Carpenter .....	99, 153
Sewing-machine, Needle for .....	J. L. Boone .....	100, 112
Sewing-machine, Needle for .....	J. B. Blanchard .....	103, 549
Sewing-machine, Needle for .....	E. Strain .....	104, 669
Sewing-machine, Needle for .....	C. R. S. Curtis .....	135, 433
Sewing-machine, Needle for .....	E. Strain .....	106, 092
Sewing-machine needle for embroidering .....	F. M. Rose .....	103, 664
Sewing-machine needles, Machine for polishing the eyes of .....	T. Fowler .....	107, 896
Sewing-machine needles, Setter-gauge and case for .....	E. E. Hendrick .....	104, 030
Sewing-machine, Presser-foot for .....	W. W. Pettie .....	100, 796
Sewing-machine, Ruffler for .....	A. M. Leslie .....	103, 492
Sewing-machine, Ruffler for .....	C. W. Howard .....	108, 787
Sewing-machine, Ruffling-attachment for .....	A. M. Leslie .....	100, 161
Sewing-machine, Ruffling-attachment for .....	J. L. Eck .....	101, 446
Sewing-machine, Ruffling-attachment for .....	A. M. Leslie .....	103, 755
Sewing-machine, Ruffling-attachment for .....	A. Johnston .....	138, 486
Sewing-machine, Shuttle for .....	M. C. Hawkins .....	103, 610
Sewing-machine, Shuttle for .....	L. Lyon .....	105, 820
Sewing-machine shuttles, Spool of thread for .....	G. T. Chattaway .....	105, 778
Sewing-machines, &c., Mechanical-movement for .....	E. Cowles .....	103, 847
Sewing-machines, Apparatus for hemming, &c., for .....	W. B. Snyder .....	106, 968
Sewing-machines, Apparatus for transmitting motion to .....	W. Wellington .....	100, 346
Sewing-machines, Attachment for .....	J. E. Mellen, E. Van Sandt, and M. J. Palmer .....	102, 294
Sewing-machines, Attachment for .....	F. T. Grimes .....	109, 612
Sewing-machines, Binding and hemming attachment for .....	C. Kasson .....	105, 577
Sewing-machines, Binding-attachment for .....	A. C. Kasson .....	100, 904
Sewing-machines, Binding-attachment for .....	L. Anderson .....	103, 538
Sewing-machines, Binding-attachment for .....	J. W. Sawyer .....	106, 730
Sewing-machines, Bobbin-winder for .....	T. Shanks .....	99, 011
Sewing-machines, Bobbin-winder for .....	T. Shanks .....	102, 164
Sewing-machines, Bobbin-winder for .....	C. H. Palmer .....	105, 363
Sewing-machines, Bobbin-winder for .....	J. L. Patch .....	110, 067
Sewing-machines, Bobbin-winding and needle-sharpening attachment for .....	R. R. Moffatt .....	110, 267
Sewing-machines, Braiding-attachment for .....	J. M. Lyon .....	98, 985
Sewing-machines, Braiding-guide for .....	A. Komp .....	110, 374
Sewing-machines, Brake for .....	J. W. Jacob .....	110, 140
Sewing-machines, Brake to prevent reverse motion in driving-wheel of .....	E. D. McIntosh .....	101, 639
Sewing-machines, Cabinet for .....	J. E. Smith .....	110, 507
Sewing-machines, Caster for .....	J. M. Veasey .....	101, 323
Sewing-machines, Caster for .....	W. P. Elliott .....	101, 843
Sewing-machines, Caster for .....	W. P. Elliott .....	101, 844
Sewing-machines, Caster for .....	B. F. Ryder .....	101, 924
Sewing-machines, Cloth-cutting attachment for .....	W. E. Prall and A. B. Rand .....	109, 662
Sewing-machines, Cloth-guiding attachment for .....	S. Rogers and E. K. Sperry .....	109, 668
Sewing-machines, Cover for .....	T. Hall .....	101, 363
Sewing-machines, Device for applying braid to fabrics in .....	E. Bouscay .....	99, 034
Sewing-machines, Device for driving .....	A. W. Harris .....	110, 034
Sewing-machines, Device for securing covers upon .....	J. H. Mooney .....	107, 398
Sewing-machines, Driving-mechanism for .....	J. Cochrane .....	106, 781
Sewing-machines, Embroidering-attachment for .....	E. J. Cubley .....	103, 578
Sewing-machines, Embroidering-attachment for .....	H. C. Goodrich .....	104, 017
Sewing-machines, Feeding-device and presser-foot for .....	C. M. Stocker .....	106, 228

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sewing-machines, Feeding-mechanism for.....	G. A. Smith.....	99, 962
Sewing-machines, Feeding-mechanism for.....	J. A. House.....	103, 764
Sewing-machines, Feeding-mechanism for.....	J. E. Gowen.....	102, 805
Sewing-machines, Feed-operating mechanism for.....	N. F. Sawyer.....	101, 926
Sewing-machines, Gathering-attachment for.....	H. A. Fisher.....	103, 318
Sewing-machines, Gathering-device for.....	J. A. Davis.....	106, 788
Sewing-machines, Hemmer for.....	C. Morehouse.....	101, 147
Sewing-machines, Hemmer for.....	J. V. D. Eldredge.....	101, 988
Sewing-machines, Hemmer for.....	A. H. Bartlett.....	107, 650
Sewing-machines, Hemmer for.....	J. V. D. Eldredge.....	107, 889
Sewing-machines, Hemmer and feller for.....	C. Carleton.....	109, 585
Sewing-machines, Hemming and felling device for.....	J. Karr.....	106, 489
Sewing-machines, Looping-hook for.....	M. A. Keables.....	103, 050
Sewing-machines, Mechanism for driving.....	E. Shriver.....	100, 935
Sewing-machines, Mechanism for operating.....	E. Shriver.....	100, 934
Sewing-machines, Mechanism for operating.....	E. L. Howard.....	110, 569
Sewing-machines, Mechanism for operating the feed- ing-wheel in.....	F. Spoehr.....	101, 779
Sewing-machines, Motive-mechanism for.....	J. W. Jordan.....	103, 891
sewing-machines, Motive-mechanism of.....	A. Whitemore.....	108, 478
Sewing-machines, Motive-power for.....	E. J. Leyburn.....	104, 603
Sewing-machines, Motive-power for.....	T. A. Macaulay.....	100, 909
Sewing-machines, Needles and their carrying-arms for.....	C. H. Palmer.....	109, 753
Sewing-machines, Needles and their carrying-arms for.....	G. A. Lloyd.....	110, 480
Sewing-machines, Needle-setter for.....	J. Karr.....	110, 144
Sewing-machines, Needle-setters for.....	J. W. Field.....	102, 795
Sewing-machines, Preventing reverse-motion in.....	D. A. Dickinson.....	103, 584
Sewing-machines, Ruffling-attachment for.....	H. M. Hall.....	106, 481
Sewing-machines, Roller for.....	R. W. Courts.....	107, 666
Sewing-machines, Scissor-sharpening attachment for.....	G. T. Chattaway.....	105, 777
Sewing-machines, Sheet-metal cover for.....	R. H. Chinn and J. F. Reigart.....	109, 384
Sewing-machines, Shield for.....	M. W. Welty.....	99, 380
Sewing-machines, Shuttle for.....	W. H. Thayer.....	103, 797
Sewing-machines, Shuttle for.....	W. W. Wells.....	106, 752
Sewing-machines, Shuttle for.....	A. W. Johnson.....	109, 414
Sewing-machines, Shuttle for.....	W. Bennett.....	109, 574
Sewing-machines, Take-up mechanism for.....	W. Bennett.....	110, 424
Sewing-machines, Thread-cutter for.....	C. J. Wood.....	106, 526
Sewing-machines, Treadle for.....	F. Stamler.....	99, 967
Sewing-machines, Treadle for.....	A. Neilson.....	109, 835
Sewing-machines, Treadle for.....	J. W. W. Gordon.....	110, 132
Sewing-machines, Tuck-creasing attachment for.....	J. B. Saffor.....	105, 852
Sewing-machines, Tuck-creasing attachment for.....	H. C. Goodrich.....	106, 151
Sewing-machines, Tuck-creasing attachment for.....	J. C. Jensen.....	110, 045
Sewing-machines, Tuck-creasing mechanism for.....	C. F. Martine.....	104, 612
Sewing-machine table.....	M. J. Kerigan.....	103, 472
Sewing-machine table.....	C. H. Wilcox.....	106, 242
Sewing-machine table.....	J. J. Wheat.....	108, 074
Sewing-machine table.....	J. Benner.....	110, 335
Sewing-machine table.....	E. L. Morgan.....	108, 812
Sewing-machine, Tension-device for.....	G. L. Dulaney.....	106, 796
Sewing-machine, Tension-device for thread in.....	G. L. Dulaney.....	102, 787
Sewing-machine, Tension-device for thread in.....	M. C. Hawkins.....	103, 609
Sewing-machine, Tension-wheel for.....	J. H. Mooney.....	103, 643
Sewing-machine, Thread-controller for.....	W. Wendell.....	103, 949
Sewing-machine, Thread-cutter for.....	J. Crowe.....	104, 561
Sewing-machine, Treadle for.....	H. J. Case.....	103, 562
Sewing-machine, Tuck-creasing attachment for.....	J. F. Kellogg.....	101, 272
Sewing-machine, Tuck-creasing attachment for.....	J. J. Sibley.....	107, 169
Sewing-machine, Tuck-marker for.....	N. Jones.....	105, 402
Sewing-machine, Tuck-marker for.....	J. F. Kellogg.....	103, 342
Sewing-mechanism.....	J. L. Young.....	109, 705
Shade-cord fastener.....	E. T. Higham.....	105, 573
Shade-cord retainer.....	W. H. Bechtel.....	106, 248
Shade for gas-light.....	W. Fullagar.....	103, 865
Shade for lamp and gas-burner.....	M. H. Collins.....	108, 912
Shade-roller attachment.....	P. J. Shirts.....	102, 326
Shaft-coupling, Universal.....	A. Keller.....	105, 696
Shaft, Flexible.....	J. B. Morrison.....	106, 498
Shaft, Gearing and self-adjusting.....	G. B. Hamlin.....	106, 360
Shafting, Adjustable hanger for.....	V. W. Mason.....	104, 044
Shafting, Elastic.....	R. Brown.....	108, 323
Shaft-iron for carriages, Method of forming.....	F. B. Morse.....	110, 385
Shafts and pipes, Machine for cutting off, and for cut- ting screw-threads.....	G. Blake.....	106, 453
Shafts and pole, Combination of.....	J. G. Burchfield and S. W. Brock.....	106, 542
Shafts, Mode of balancing.....	H. Martinson.....	110, 250
Shaft-tug.....	W. H. Correll.....	103, 020
Shank-laster and punch.....	F. Henderson.....	104, 733
Shank-stiffener.....	G. Houghton, S. Moore, and H. Rogers.....	102, 401
Shaping-machine.....	A. B. Couch.....	103, 021

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sharpening reaper-knives, Machine for .....	C. C. Hardy .....	105, 802
Shaving-mug .....	F. B. Clock .....	107, 450
Shawl-strap .....	G. B. Broad .....	105, 416
Shear-blades, Process of welding and tempering .....	H. Wendt .....	103, 693
Shearing and clipping apparatus .....	G. Twigg .....	107, 128
Shearing and punching machine .....	T. H. Witherby .....	101, 339
Shearing and punching machine .....	J. C. Wilcox .....	106, 300
Shearing, punching, upsetting, and bending metal, Compound-machine for .....	W. Sleeper .....	107, 415
Shears .....	F. Ulrich .....	100, 218
Shears .....	J. Booth .....	101, 220
Shears and scissors .....	C. C. Johnson .....	102, 944
Shears for cutting flowers .....	J. W. Barbour .....	108, 091
Shears, Library .....	L. Prang .....	104, 996
Shears, Manufacture of .....	J. Ryals .....	102, 437
Shears, Manufacture of .....	W. B. and A. J. Barnard .....	106, 649
Shears, Pruning .....	H. Wendt .....	98, 826
Shears, Pruning .....	P. R. Walsh and G. C. Eaton .....	99, 038
Shears, Pruning .....	G. Bergner .....	101, 571
Shears, Pruning .....	C. A. Kellogg .....	103, 197
Shears, Pruning .....	A. L. Hatfield .....	103, 327
Shears, Pruning .....	A. B. Chapman .....	105, 173
Shears, Pruning .....	J. G. Rogers .....	105, 255
Shears, Pruning .....	H. W. Black .....	105, 629
Shears, Pruning .....	R. Bullard and G. E. Mills .....	106, 253
Shears, Pruning .....	G. Bergner .....	106, 538
Shears, Pruning .....	E. J. Marsters .....	106, 705
Shears, Pruning .....	F. A. Will .....	107, 577
Shears, Pruning and hedge .....	E. K. Bigelow .....	102, 752
Shears, Sheep .....	W. B. Barnard .....	98, 840
Shears, Sheep .....	D. Campbell .....	105, 639
Shears, Tinsmiths' .....	O. W. Stow .....	103, 386
Sheave .....	H. D. Davis .....	106, 335
Sheave .....	A. M. Cushing .....	109, 184
Sheaves, Bearing .....	W. W. Eastman .....	103, 587
Shed, Adjustable .....	F. L. Hall .....	104, 142
Sheep, Wash for the cure of scab in .....	H. Smith .....	108, 199
Sheet-gauge for printing-press .....	H. Barth .....	99, 133
Sheet-gauge for printing-presses .....	G. B. Cummings .....	99, 167
Sheet-iron, Apparatus for enameling .....	W. Harris and D. Hall .....	103, 741
Sheet-iron, Manufacture of .....	J. D. Grey .....	103, 323
Sheet-lead, Machine for making .....	J. Millinger .....	105, 112
Sheet-metal cutting-machine .....	S. B. Fitch .....	107, 351
Sheet-metal grooving-machine .....	D. H. Metcalf and D. Squier .....	102, 027
Sheet-metal lining in pump-stocks, Machine for securing .....	N. T. Coffin .....	105, 912
Sheet-metal, Machine for corrugating .....	F. Roys .....	100, 929
Sheet-metal, Machinery for corrugating .....	W. Mann .....	101, 750
Sheet-metal, Machinery for corrugating and molding .....	A. Johnson .....	99, 684
Sheet-metal, Machine for grooving .....	C. F. Bliesenick .....	100, 111
Sheet-metal, Machine for spinning .....	J. J. Marcy .....	100, 912
Sheet-metal moldings, Machine for forming .....	H. G. Fiske .....	106, 803
Sheet-metal pipe forming and threading machine .....	M. K. Pierce .....	104, 196
Sheet-metal seaming-machine .....	J. M. Veasey .....	101, 065
Sheet-metal spoons, forks, &c., Handle of .....	H. C. Milligan .....	104, 051
Sheet-metal to an oval form, Machine for cutting .....	W. D. Grimshaw .....	110, 354
Sheet-music turner and holder .....	F. J. Herpers and M. M. Sommer .....	99, 568
Sheets of India rubber, Machine for cutting .....	C. A. Ensign .....	109, 725
Shelf-bracket and clothes-hook .....	H. E. Hutchinson .....	110, 239
Shelf for ovens of cooking-stoves .....	S. S. Utter .....	101, 549
Shelf, Suspended .....	J. B. Stockton .....	106, 090
Shellac, Treating .....	A. Zinsser .....	108, 550
Shell-fuse .....	J. Eggo .....	110, 219
Shelving for stores .....	W. E. Scott .....	104, 890
Shelving for stores .....	R. Murdock .....	108, 930
Shield for carriage-step .....	C. H. Gould .....	107, 482
Shield for gas-burners .....	H. J. Wattles .....	104, 516
Shield for gas-burners .....	I. W. Shaler .....	107, 824
Shield for infantry and artillery, Portable .....	H. Spears .....	110, 599
Shield for padlocks .....	C. C. Gale .....	104, 441
Shield for pitchers, &c .....	F. B. Carleton .....	100, 374
Shifting buggy-top .....	D. Eldridge .....	99, 865
Shifting-rail for buggies .....	I. Bronson .....	101, 980
Shingle-bolts, Machine for sawing .....	M. Hart .....	102, 396
Shingle-machine .....	C. F. Rice .....	99, 237
Shingle-machine .....	D. Wilkes .....	99, 507
Shingle-machine .....	W. H. H. Palmer .....	99, 940
Shingle-machine .....	G. Walton .....	100, 223
Shingle-machine .....	E. T. Wheeler .....	102, 343
Shingle-machine .....	J. E. Austin .....	105, 540
Shingle-machine .....	C. Nordell .....	107, 092
Shingle-machine .....	O. T. Williams .....	107, 429

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Shingle-machine	C. Shelmidine	109, 258
Shingles and clapboards, Composition for covering	O. E. Bowen	103, 554
Shingles and other articles, Apparatus for immersing in liquids.	C. Bates	105, 769
Ship, Aerial	M. Bann	99, 629
Shipping and unshipping hooks	N. Havermale	99, 671
Shipping and unshipping screw-propeller	G. Leach	108, 800
Ship's blocks	C. F. Annan	100, 709
Ships, boats, &c., Composition for coating	E. V. Gardner and P. M. Crane	98, 862
Ship's bottoms, Copper paint for	T. F. Griffin and R. Farr, jr	103, 474
Ships' compasses, Electro-magnetic attachment to	A. Foucault	105, 562
Ships' compasses, Preventing the deviation of	J. W. Girdlestone	103, 585
Ships, Floating	G. W. Corey and T. Losie	100, 606
Ship's port	C. E. Marshall	104, 474
Ship's rudder	T. Robbin and C. E. Burk	98, 636
Ship's topmast	E. Denton	105, 554
Shirt	S. H. and J. Strouse	102, 612
Shirt	H. Wallace	102, 990
Shirt	W. H. Carroll	108, 567
Shirt and collar combined	J. A. Jones	103, 195
Shirt-bosom	M. Palmer, jr	103, 232
Shirt-bosom and wrist-band combined	E. H. N. Warner	101, 794
Shirt, Reversible	C. O. Richter	100, 669
Shirt-sleeve	W. A. Ramsay	98, 521
Shirt-yoke	M. Palmer	101, 155
Shoe	F. Kilsheimer	102, 946
Shoe	T. R. Evans	103, 164
Shoe	J. L. Joyce	106, 488
Shoe	J. Putnam	107, 289
Shoe	F. Gurney	109, 407
Shoe	J. W. Fisher	109, 728
Shoe	J. W. Fisher	109, 729
Shoe-brush and box, Portable	E. A. Pierce	102, 430
Shoe-fastener	A. McKenney	102, 614
Shoe-fastener	J. E. Otto	105, 482
Shoe-fastening	W. H. Fortney and W. E. Shaeffer	101, 360
Shoe-fastening	A. E. Kroger	102, 557
Shoe-fastening	J. Koykendall	107, 064
Shoe-fastening	W. P. Ware	107, 572
Shoe-fastening	H. T. Lee	108, 491
Shoe-fastening for shoe-boxes	W. W. Walton	109, 563
Shoe, Felt	C. W. Palmer and C. Houghton	98, 793
Shoe for horses	H. Downie and I. B. Harris	99, 072
Shoe, India-rubber	L. Elliott, jr., and G. H. Fowler	106, 346
Shoe-lining, Removable	H. A. Everts	107, 767
Shoemakers, Edge-iron for	E. D. Beales	104, 540
Shoemakers' edge-plane	J. H. Sanford	102, 048
Shoemakers' edge-plane	A. P. Hazard	105, 452
Shoe-patterns, Scale for laying out	W. Sheill	104, 894
Shoes, &c., Fabric for the manufacture of	E. Waite	107, 642
Shoes, Insole for the manufacture of	C. S. Dunbrack	108, 985
Shoes, Machine for lasting	C. H. Trask	107, 981
Shoe-sde, Galvanic	J. Fanyou	101, 602
Shoes, Bounding-up machine for	H. S. Vrooman	107, 641
Shoe-stay stock, and machine for making the same	S. N. Smith	107, 300
Shoe-sting fastening	C. M. O'Hara	105, 236
Shoes, turned-sewed, Method of making	W. Duchemin	102, 786
Shoe-trimming	W. T. Demarest	101, 593
Shoe-upper edges, Device for folding and ironing	C. A. J. and T. K. Keith	107, 385
Shoe, Water-proof	W. H. Towers	99, 262
Shot, Receptacle for measuring out	E. C. Carleton	105, 641
Shot, rounding, Machine for	C. Kochler	99, 209
Shoulder-brace	H. N. Conklin	98, 564
Shoulder-brace	S. S. Ritter	99, 478
Shovel	G. W. Gregory	104, 140
Shovel	W. H. Smith	107, 827
Shovel and dung-fork, Combined	J. Carpenter	106, 464
Shovel, Ash	R. J. S. Thompson	100, 952
Shovel-blank	G. W. Jope	99, 775
Shovel, Coal	J. F. Brewer	100, 008
Shovel for seeder	D. Slaughter	107, 554
Shovel-handle	J. L. Shaw	99, 247
Shovel-handle	G. C. Choate	101, 711
Shovel-plow and cultivator	E. G. and A. D. Rowell, J. R. Rice, and S. M. Seeley	108, 834
Shovels and plow-shares to standards, Device for securing	J. Pierpont	99, 702
Shovel, snow, Railway	J. W. Elliott	108, 894
Show-case	E. Watson and R. H. Norris	106, 240
Show-case	J. A. Holmes	106, 586
Show-case	M. M. Belding	107, 753



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Show-case .....	P. Price.....	109, 663
Show-case for silks, cottons, &c.....	G. D. Leonard.....	98, 982
Show-case for spools and other articles.....	J. N. Leonard.....	99, 920
Show-case, Tobacco-box.....	A. Bernstein.....	105, 414
Show-stand.....	J. R. Pahlenberg.....	108, 046
Shuck-hackling machine.....	W. H. Tappey, W. C. Lumsden, and A. Steel.....	108, 207
Shutter fastener.....	F. W. Frost.....	102, 108
Shutter-fastener.....	J. B. Field.....	103, 316
Shutter-fastener.....	C. K. Osborn.....	103, 766
Shutter-fastener.....	J. W. King.....	106, 176
Shutter-fastening.....	A. L. France.....	107, 354
Shutter-fastener.....	A. Rankin.....	108, 052
Shutter-fastener.....	H. Grow.....	108, 256
Shutter-fastener.....	I. O. Lucy.....	103, 329
Shutter-fastener.....	T. Hair and J. Wood.....	109, 818
Shutter-fastening.....	S. D. Arnold.....	105, 409
Shutter-fastening.....	J. Berbecker.....	107, 651
Shutter-fastening.....	J. Pusey.....	107, 720
Shutter-holder, Adjustable.....	C. N. Herr.....	102, 817
Shutter-worker.....	A. C. Cornell.....	101, 983
Shutter-worker.....	H. Wolff.....	102, 191
Shutter-worker.....	H. Wolff.....	102, 192
Shutter-worker.....	H. Wolff.....	105, 400
Shutter-worker.....	G. L. Danforth.....	105, 918
Shutter-worker.....	H. W. Boynton.....	106, 114
Shutter-worker.....	C. A. Potter.....	109, 661
Shutters for hatchways, Mode of operating.....	J. H. McKernan.....	102, 954
Shuttle.....	H. E. Towle.....	108, 409
Shuttle for looms.....	R. Webendorfer.....	98, 822
Shuttle for looms.....	W. H. Burns.....	99, 152
Shuttle for looms.....	E. A. Paine.....	100, 317
Shuttle-stopping device.....	T. Bosshard.....	106, 774
Shuttle, Tatting.....	B. L. Fetherolf.....	103, 436
Shuttle, Tatting.....	C. H. Smith.....	106, 415
Sickle-bar.....	C. A. Gardiner.....	100, 392
Sickle-grinder.....	A. B. Jones.....	98, 693
Sickle-sections, plane-irons, &c., Machine for tempering.....	S. F. Reynolds.....	107, 541
Side-board and extension-table.....	D. Arnaud.....	103, 958
Side-door, Combination.....	C. H. Noyes.....	106, 861
Siding for buildings.....	C. Avery.....	107, 323
Side-saddle.....	W. Hill.....	104, 456
Side-saddle tree.....	J. Straus.....	103, 101
Side-saddle tree.....	W. Hill.....	104, 455
Side-saddle tree.....	A. Lawrence.....	110, 147
Sieve.....	R. J. Mann.....	106, 597
Sieve, Grain and seed.....	N. S. Greenwood.....	105, 066
Sifter.....	S. O. Blanding.....	110, 543
Sifter, Ash.....	F. X. Lipp.....	100, 421
Sifter, Ash.....	L. G. Hoffman.....	104, 735
Sifter, Ash.....	W. S. Esty and I. S. Clough.....	108, 991
Sifter, Ash, leach, and smoke-house.....	D. W. Doan.....	98, 477
Sifter, Coal.....	B. Sears.....	100, 331
Sifter, Coal.....	A. P. Webb.....	104, 671
Sifter, Coal.....	S. Adams.....	106, 532
Sifter, coal, Automatic.....	W. Gluck.....	98, 583
Sifter, Flour.....	P. Becker.....	103, 964
Sifter, Flour.....	G. Gessert.....	105, 667
Sifting-apparatus.....	S. O. Blanding.....	100, 360
Sifting-machine.....	G. Sidey.....	105, 989
Sighting and firing ordnance, Device for.....	G. K. Farrington.....	110, 448
Sign.....	P. A. Le France and J. D. Densmore.....	101, 025
Signal and other flags.....	J. Holt.....	102, 267
Signal-apparatus.....	A. H. Huntington.....	100, 153
Signal-box for fire-alarm telegraphs.....	S. D. Cushman.....	107, 460
Signal for railways.....	N. Whitney.....	105, 154
Signal, Railway-car.....	W. M. Russell and O. S. Pease.....	104, 651
Silk, &c., Machine for spinning and doubling.....	T. N. N. Dale, jr., and G. Kraink.....	109, 185
Silk, Compound for cleansing.....	K. Fries.....	102, 246
Silk, Machine for stretching.....	G. R. Kennedy.....	103, 051
Silver and gold, Process of extracting, from arsenic sulphurets.....	C. M. T. Du Motay.....	103, 433
Single-tree.....	A. J. Hanna.....	102, 000
Sink.....	S. Walsh.....	108, 538
Sink and wash-stand.....	C. L. Hedell.....	102, 002
Sink-apparatus for draining cellars.....	A. Knacker.....	101, 744
Sink, Kitchen and household.....	E. G. Chormann and E. McLaughlin.....	110, 203
Siphon.....	J. A. Bostwick.....	99, 526
Siphon.....	S. S. Moyer.....	100, 726
Siphon.....	S. C. Catlin.....	103, 564
Sirup, Cough.....	J. Conzleman.....	105, 916

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sirup, Lemon-fruit.....	S. W. Mahan.....	105, 226
Sirup or medicine, Pectoral.....	G. La Montague.....	107, 066
Sirup, Raspberry and strawberry fruit.....	S. W. Mahan.....	105, 227
Sirups and other liquids, and materials for the same, Retining and decolorizing.....	D. Hull.....	110, 042
Sizing and felting hat-bodies, Machine for.....	G. A. Mandeville.....	132, 715
Skate.....	J. F. Schneider.....	101, 049
Skate.....	C. T. Day.....	101, 108
Skate.....	G. B. Scobey.....	101, 523
Skate.....	A. C. Platt.....	106, 725
Skate.....	E. P. Waggoner.....	106, 748
Skate.....	C. Wheat.....	108, 662
Skate.....	A. C. Platt.....	109, 935
Skate-fastening.....	H. B. Hooker.....	102, 269
Skate-fastening.....	G. W. Wheat.....	102, 446
Skate-fastening.....	M. Kinsey.....	103, 623
Skate-fastening.....	T. Almond.....	103, 822
Skate-fastening.....	B. Gallagher.....	103, 581
Skate-fastening.....	F. C. Poole and H. Howe.....	109, 451
Skate, Parlor.....	J. Lemman.....	103, 346
Skate, Parlor.....	J. Pollitt.....	103, 154
Skate, Parlor.....	T. F. Leak.....	109, 026
Skate, Roller.....	R. T. Bradley and H. W. Wansbrough.....	103, 419
Skate, Roller.....	J. A. Freeman and J. H. Carkeet.....	106, 045
Skaters, Apparatus for the support of.....	P. J. Schopp.....	108, 395
Skins, Dressing and tanning.....	H. A. Hibbard.....	106, 584
Skis, Machinery for dressing.....	H. P. Reed and T. E. Wilson.....	107, 625
Skins, Softening sheep and other.....	J. M. Brown.....	109, 379
Skirt.....	H. Schultz.....	109, 947
Skirt, Hoop.....	J. Waterman.....	101, 195
Skirt, Hoop.....	C. E. Pratt.....	105, 124
Skirt, Life-preserving.....	S. E. Saul.....	105, 730
Skiving-machine.....	J. Kavanagh.....	100, 771
Sky-light.....	G. Hayes.....	100, 143
Sky-light.....	G. Hayes.....	106, 157
Sky-light.....	S. P. Snead.....	106, 967
Sky-light, Device for operating.....	W. Dyatt.....	103, 572
Slab formed from plastic materials, Decorative.....	E. Robbins.....	99, 479
Slag from iron and glass furnaces, Treating, to produce a useful material.....	A. A. Player and H. McAllister, jr.....	103, 650
Slate-frame.....	W. A. Wilde.....	98, 653
Slate-frame.....	W. Hersee.....	99, 187
Slate-frame.....	E. Butler.....	99, 756
Slate-frame.....	S. Bushfield, jr.....	99, 841
Slate-frame.....	C. B. Dickinson.....	100, 507
Slate-frame.....	W. N. Bartholomew.....	100, 712
Slate-frame.....	W. A. Wilde.....	101, 793
Slates, Machine for ruling.....	F. Ames.....	106, 134
Slat for bedsteads.....	A. S. and O. H. Drisko.....	104, 944
Slating for forming blackboards, &c., Liquid.....	W. M. Dudley.....	106, 923
Slats for window-shades, Device for cutting.....	F. A. Bixler.....	109, 437
Slate-washer.....	S. G. Dugdale.....	101, 987
Slate, Writing.....	J. H. French.....	99, 661
Slate, Writing.....	G. E. Poor.....	100, 799
Sled.....	C. H. Douglas.....	107, 345
Sled.....	B. E. Hemingway.....	107, 776
Sled, Bob.....	J. Wampach.....	103, 396
Sled, Ice.....	L. Darozier.....	98, 474
Sleeper for railways, Metallic.....	C. Fisher.....	109, 504
Sleeping-cars, Suspending upper berth in.....	E. H. Paine.....	98, 792
Sleigh.....	C. P. Kimball.....	99, 207
Sleigh.....	H. Smith.....	102, 327
Sleigh.....	J. Martin.....	109, 531
Sleigh.....	S. S. Spear.....	109, 632
Sleigh.....	A. Jones.....	119, 571
Sleigh and carriage for children.....	B. P. Crandall, jr.....	106, 126
Sleigh-bells to straps, Mode of attaching.....	W. E. Barton.....	106, 456
Sleigh-bench.....	E. Milner.....	101, 298
Sleigh-knee.....	J. P. Garland.....	99, 770
Sleigh-knee.....	O. Johnson.....	107, 055
Sleigh-lock.....	F. Talbot.....	108, 206
Sleigh-runner.....	J. Logan.....	108, 917
Sleigh-runner, Metal.....	D. Holdman.....	104, 309
Sleigh-shoe.....	T. B. Titus.....	98, 530
Sleighs, Shifting-bar for.....	A. J. Spencer.....	100, 206
Slide, Extension-table.....	W. Donohue.....	106, 340
Slide for extension-tables.....	S. Stilwell.....	107, 636
Slide-valves, Adjustable arms for working.....	H. Hendrickson.....	107, 492
Sliding-door apparatus.....	J. Capron.....	103, 139
Sliding-doors, Track-rail for.....	E. Parker.....	107, 530
Sliding-square and caliper.....	L. L. Lamb.....	99, 917

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Slipping of machine-belts, Composition to prevent.....	I. F. Eaton.....	103, 034
Slotting-tool holder.....	W. Seaton.....	99, 113
Snice-box for gold-mining.....	J. H. Whitney.....	100, 829
Smiths' forges, Fan-blower for.....	L. Duskin and B. Sledge.....	107, 167
Smoke-stack.....	H. Mackinnon.....	102, 020
Smoke-stack, Locomotive.....	W. J. Mehary.....	105, 107
Smoke-stack, Locomotive.....	E. Fontaine.....	108, 899
Smoke-stack, locomotive, Self-cleaning.....	S. M. Cummins and H. Israel.....	110, 441
Smoothing-iron handle.....	T. Van Tassell and R. S. Pollock.....	99, 265
Smut-machine.....	F. Ihlenfeldt.....	103, 049
Smut-machine.....	W. H. Kite and G. S. Newman.....	110, 475
Smut-mill and separator.....	J. Mills and A. G. Waldo.....	100, 054
Snapper-cleat.....	J. T. Thompson.....	107, 738
Snow-shovel.....	W. P. Wentworth.....	107, 314
Soap.....	L. Brochett.....	104, 549
Soap-cutting machine.....	W. and H. N. Humiston.....	105, 458
Soap-dish and brush-rack.....	A. Crawford.....	108, 765
Soap, Indigo.....	H. C. Borgner.....	99, 823
Soap into slabs, Machine for cutting.....	J. Gallipo.....	100, 135
Soap, Machine for cutting, stamping, and packing.....	L. Beach and L. L. Beach, jr.....	102, 907
Soap-makers' spent lyes, Process of obtaining glycerine from.....	B. T. Babbitt.....	107, 324
Soap, Manufacture of.....	H. A. Pease.....	99, 468
Soap, Manufacture of.....	A. Warfield.....	101, 193
Soap, Manufacture of.....	C. W. Hull.....	102, 546
Soap, Manufacture of.....	H. M. Baker.....	102, 946
Soap, Manufacture of.....	J. Treat.....	104, 796
Soap, Manufacture of.....	L. Groux.....	105, 670
Soap, Manufacture of.....	A. Warfield.....	108, 540
Soap, Medicated.....	T. F. Smith.....	102, 983
Soap-mixture.....	J. M. Austin.....	99, 811
Soap, or washing-fluid, Soft.....	J. Bolinder.....	104, 104
Soap product from glue residuum.....	J. Van Haagen and W. Adamson.....	99, 979
Soap, Putting up.....	W. F. George.....	108, 584
Soap, resin, Manufacture of.....	D. B. Chapman.....	106, 322
Soaps, Apparatus and process for the manufacture of.....	M. and F. Hyde.....	104, 739
Soap, Washing.....	J. C. Smith.....	102, 981
Socket for broom-handles.....	H. Achew.....	110, 325
Socket for lock-spindles.....	O. Gallagher.....	108, 343
Socket-pipe machinery.....	F. M. Mattice.....	104, 046
Soda-fountain.....	G. D. Dows.....	99, 170
Soda-fountain.....	S. B. Spring.....	101, 534
Soda-fountain.....	N. T. Hamilton.....	103, 453
Soda-fountain.....	A. D. Puffer.....	104, 881
Soda-fountain.....	E. M. Fowler.....	105, 933
Soda, Manufacture of aluminate of.....	H. M. Baker.....	108, 089
Soda-water and other liquids, Apparatus for cooling.....	A. D. Puffer.....	109, 942
Sofa.....	J. Ciesor.....	107, 224
Sofa and bedstead.....	C. J. McAlister.....	104, 176
Sofa-bed.....	J. J. Russ.....	104, 358
Solar time instrument.....	F. M. Pannetrat.....	106, 718
Soldering apparatus.....	J. Golden.....	103, 603
Soldering fire-pot.....	E. W. Kimball.....	102, 555
Soldering-furnace.....	J. McPherson.....	100, 174
Soldering-iron.....	J. A. Bostwick.....	104, 412
Soldering-kit.....	M. D. Kelly.....	105, 219
Soldering-machine.....	D. P. Newell.....	99, 103
Soldering-machine.....	E. T. Covell.....	99, 410
Soldering-machine.....	J. Le Comte.....	100, 160
Soldering-machine.....	E. T. Covell.....	104, 431
Soldering-machine.....	E. T. Covell.....	107, 458
Sole-sewing machine.....	L. R. Blake.....	107, 155
Sole-sewing machine.....	J. P. Greely.....	108, 132
Soles for packs, Press for forming.....	W. G. Slater.....	110, 299
Soles, Machine for fastening.....	C. H. Helms.....	107, 369
Soluble salts from artificial stone, Removing.....	E. L. Ransome.....	108, 627
Sorghum juice, cooking feed, &c., Apparatus for evaporating.....	T. J. Newby.....	108, 169
Sorghum-stripper.....	D. A. Reid.....	104, 882
Sower and cultivator, Seed.....	G. Bradley.....	104, 926
Sower, Cotton-seed.....	J. Shearer.....	104, 893
Sower, Fertilizer.....	T. J. West.....	100, 573
Sower, planter, cultivator, scraper, and gang-plow, Combined.....	J. P. Eddleman.....	103, 855
Sower, Seed.....	J. H. Thomas.....	99, 498
Sower, Seed.....	T. Howell.....	103, 464
Sower, Seed.....	S. A. Scott.....	103, 666
Sower, Seed.....	F. H. Manny.....	103, 760
Sower, Seed.....	D. W. Gusman, J. A. Davis, and H. D. McGeorge.....	104, 302
Sower, Seed.....	W. Painter.....	104, 992
Sower, Seed.....	J. G. Thompson and F. H. Briggs.....	103, 470

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sower, Seed.....	S. H. Sheplar and W. G. Conklin.....	110, 595
Spade and shovel.....	J. W. Pearce.....	105, 838
Spade and shovel.....	J. Caylor.....	106, 779
Spader, Rotary.....	J. Chenoweth.....	101, 710
Spark-arrester.....	E. Waud.....	99, 378
Spark-arrester.....	W. Ballard.....	104, 199
Spark-arrester.....	J. Smith.....	106, 515
Spark-arrester.....	J. Wiedman, J. Major, and J. J. Sample.....	110, 315
Spark catcher and consumer.....	D. Beach.....	108, 958
Spectacle-frame.....	C. Buckley.....	101, 820
Spectacles.....	C. C. St. Clair.....	104, 656
Spermatorrhea, Apparatus for cure of.....	I. L. G. Rice.....	104, 204
Spider-furnace for burning bagasse.....	J. Amick.....	101, 968
Spider, skillet, and gridiron, Combined.....	T. Foster.....	100, 397
Spike, bolt, and rivet machine.....	M. Decelle.....	103, 025
Spike-drawer.....	B. B. Wood.....	106, 015
Spike-extractor.....	W. Kegg.....	98, 977
Spike-extractor.....	L. Lehman.....	104, 966
Spike-extractor.....	W. Ward.....	105, 016
Spike for railways.....	J. Montgomery.....	100, 055
Spikes, Art of manufacturing.....	D. Eynon.....	107, 602
Spindle-bolster.....	W. F. Draper.....	106, 567
Spindle-bolster.....	I. P. Richards.....	106, 621
Spindle for safe-lock.....	R. Haile.....	104, 020
Spindle for spinning-machine.....	G. W. Daugherty.....	103, 996
Spindles, Oil-cups and bearings for.....	E. Convers.....	104, 115
Spindles, Self-packing bush for.....	C. Miller.....	102, 848
Spindle-step.....	E. D. Murfey.....	109, 238
Spindle-step cap.....	W. E. Draper and J. B. Bancroft.....	102, 514
Spinning and other machines, Stopping-mechanism for.....	S. W. Westcott.....	106, 299
Spinning-machine.....	L. W. Felt.....	103, 858
Spinning-machine.....	W. La Banister and L. V. Doggett.....	105, 815
Spinning-machine.....	W. Duffner.....	106, 675
Spinning-machine.....	W. D. Huse.....	108, 356
Spinning-machine, Drawing and twisting head for.....	S. W. Lawrence, P. Walden, and J. W. Huntton.....	108, 709
Spinning-machine, Hand.....	W. H. Main.....	103, 906
Spinning-machines, Saddle for.....	J. S. Casey.....	107, 753
Spinning-machines, Trumpet for.....	G. Draper.....	110, 021
Spinning-mules, Device for preventing the uncoupling of clutches in.....	H. Macon and J. Hunt.....	105, 705
Spinning-ring.....	W. F. Draper.....	106, 140
Spinning, Self-acting mules for.....	J. Cumnock.....	108, 688
Spinning, Twisting-tubes for.....	C. D. House.....	99, 674
Spiral-fastening.....	C. S. Muscroft.....	103, 645
Spirit-level.....	E. A. and C. M. Stratton.....	100, 463
Spirits, Ageing.....	A. Caldwell.....	107, 658
Spirits, Apparatus for distilling.....	F. M. Young.....	102, 745
Spirits, Apparatus for rectifying.....	L. S. Snediker.....	103, 790
Spirits, Apparatus for redistilling and rectifying.....	A. Noteman.....	102, 033
Spirits, Rectifying and improving alcoholic.....	D. Worthen.....	107, 645
Spirits, Treating grain to obtain extracting-matter for coloring and flavoring.....	S. H. Gilman.....	104, 138
Spittoon.....	W. H. Topham.....	106, 094
Spittoon-holder.....	C. O. Haley.....	107, 362
Spittoon, Railroad-car.....	W. J. Beach.....	104, 691
Spittoons, Attaching, to floors of railroad-cars.....	J. S. Daggett.....	99, 857
Splint for fractured limbs.....	G. S. King.....	101, 743
Splint for fracture of clavicle.....	H. L. Richardson.....	99, 709
Split-ring.....	T. S. Hattersley.....	99, 891
Spoke for wagon-wheels.....	R. Potts and N. Ogden.....	102, 861
Spokes, Device for tenoning.....	C. W. Tompkins.....	101, 945
Spokes, Machine for dressing.....	R. H. and H. S. Boynton.....	108, 439
Spokes, Machine for finishing.....	W. P. Hale.....	98, 955
Spokes, Machine for smoothing.....	H. Keys.....	99, 913
Spokes, Machine for tenoning.....	J. P. Crutchfield and C. T. Whitten.....	98, 746
Spokes, Machine for tenoning.....	J. W. Huffman.....	107, 911
Spoke-shave.....	J. Davies.....	98, 475
Spoke-shave.....	G. N. Stearns.....	110, 163
Spoke-socket for carriage-wheels.....	A. J. Carleton.....	101, 821
Spoke-tenoning and hub-boring machine.....	J. Deming.....	103, 157
Spool and needle-threader, Combined.....	G. P. Farmer.....	106, 925
Spool-case.....	W. F. Foster.....	100, 995
Spool-holder.....	J. C. Koch and B. J. Beck.....	107, 786
Spooling-machine.....	G. W. Daugherty.....	103, 955
Spooling-machine, Stop-motion for.....	S. Semple, jr.....	100, 675
Spool-machine.....	J. F. C. Rider and C. P. Brownell.....	105, 250
Spool or bobbin.....	A. Carmichel.....	102, 772
Spool show-case.....	I. Dimock.....	107, 343
Spools, Machine for printing labels on.....	G. Hall, jr.....	104, 951
Spools, Machine for printing on.....	G. Hall and G. W. Averell.....	102, 257

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Spool-stand .....	E. C. Heywood .....	109, 209
Spool, Thread .....	I. L. Hoard .....	108, 595
Spool-thread case .....	A. Parsons .....	101, 909
Spool-thread case .....	J. D. Cutter .....	106, 128
Sponge, Coach-cleaning .....	H. D. Ohlsen .....	106, 076
Sponge, Multiple .....	H. E. Smith .....	101, 776
Sponges, Bleaching, tanning, and coloring .....	F. Braun and A. T. Schmidt .....	102, 760
Spoon .....	G. H. Spencer .....	107, 419
Spoon-holder .....	S. Simpson .....	100, 938
Spoon-holder and bell .....	S. Simpson .....	100, 680
Spring .....	J. Wayland .....	102, 340
Spring .....	J. M. Schmidt .....	108, 636
Spring-balance, Computing .....	S. R. P. Camp .....	103, 977
Spring, Bed .....	A. W. Obermann .....	104, 633
Spring, Bed .....	D. A. T. Gale .....	108, 998
Spring, Buck-board .....	T. H. Brown .....	102, 762
Spring, Buggy .....	G. W. Kenan .....	107, 386
Spring, Car .....	T. F. Allyn .....	101, 563
Spring, Car .....	C. French .....	101, 724
Spring, Car .....	F. W. Rhinelander .....	103, 778
Spring, Car .....	R. Rose .....	105, 524
Spring, Car .....	P. G. Gardiner .....	107, 034
Spring, Car .....	P. G. Gardiner .....	107, 035
Spring, Car .....	P. G. Gardiner .....	107, 036
Spring, Carriage .....	C. Sheldon .....	99, 249
Spring, Carriage .....	B. T. Henry .....	100, 626
Spring, Carriage .....	J. S. Foster .....	104, 135
Spring, Carriage .....	R. E. Walker .....	106, 005
Spring, Carriage .....	S. Steward .....	103, 649
Spring, Carriage .....	F. B. Morse .....	108, 629
Spring, Carriage .....	T. H. Prushaw .....	109, 544
Spring, Carriage .....	D. S. Abbott .....	109, 993
Spring-chair for children .....	M. Stephan .....	100, 083
Spring-clamp for glass-blowers .....	T. Wightman .....	102, 899
Spring, Corset .....	F. W. Marston .....	106, 381
Spring, Corset .....	T. A. Hares .....	106, 934
Spring-cushion for car-seats .....	W. B. Hatch .....	108, 477
Spring, Door .....	B. G. Fitzhugh .....	100, 388
Spring, Door .....	A. Mishler .....	102, 029
Spring, Door .....	A. T. Ballantine .....	102, 197
Spring, Door .....	J. T. Folwell .....	103, 859
Spring, Door .....	W. Allen .....	105, 025
Spring, Door .....	M. Jincks .....	107, 616
Spring, Door .....	W. F. Kells .....	108, 268
Spring, Door .....	W. H. Stafford .....	109, 962
Spring, Elliptic .....	F. Keeler .....	99, 776
Spring-fan .....	O. Brueck .....	108, 236
Spring for bed .....	C. Rich .....	101, 660
Spring for beds .....	C. Rich .....	106, 980
Spring for beds, sofas, &c .....	W. Lord .....	106, 069
Spring for beds, sofas, &c .....	J. Sears .....	110, 293
Spring for piston-packing .....	D. Maydole .....	106, 495
Spring for railroad-cars .....	J. F. Babcock .....	101, 080
Spring for railway-cars .....	C. M. Banks .....	99, 813
Spring for railway-cars, Spiral .....	F. W. Rhinelander .....	100, 926
Spring for railway-car truck .....	W. M. Taylor .....	109, 358
Spring for vehicles .....	B. Crandall, jr .....	104, 277
Spring for vehicles .....	H. E. Wolcott .....	108, 745
Spring for vehicles .....	E. Wright .....	109, 095
Spring, Gate and door .....	M. Harrington .....	109, 512
Spring-guard .....	J. S. Behm .....	102, 209
Spring-guard, Jointed .....	U. B. Kline .....	104, 039
Spring-headed screw-bolt .....	D. R. Pratt .....	99, 473
Spring, Helical .....	W. R. Nichols .....	102, 421
Spring-hinge for doors, &c .....	A. Rankin .....	107, 813
Spring-hinge for doors, &c .....	A. F. Shiffing .....	107, 819
Spring-holder for wagon-seats .....	J. A. L. Forgee .....	99, 448
Spring-nut .....	D. R. Pratt .....	99, 232
Spring, Railroad-car .....	T. F. Allyn .....	98, 732
Spring, Railway-car .....	D. G. Daniels .....	98, 672
Spring, Railway-car .....	F. W. Rhinelander .....	99, 475
Spring, Railway-car .....	R. Vorse .....	104, 907
Spring, Railway-car .....	J. Mitchell .....	105, 478
Spring, Railway-car .....	H. Gardiner .....	109, 312
Spring, Railway-car .....	A. Potts .....	110, 497
Springs, Car and other .....	J. W. Cochran .....	110, 204
Springs, car, Machine for making .....	A. Hebbard .....	100, 400
Springs, car, Vulcanized India-rubber .....	H. A. Alden .....	98, 540
Springs, elliptical, Machine for forming .....	J. B. Cleveland and H. C. Guildesleive .....	104, 114
Springs for bed-bottoms, seats, &c., Connection of .....	C. Rich .....	102, 867
Springs for railway-cars and other vehicles .....	W. R. Nichols and C. W. Pickering .....	102, 422

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Springs, volute, Machine for bending.....	R. Miller.....	106, 603
Spring, Thorough-brace.....	J. Goller.....	103, 041
Spring, Upholstering.....	H. C. Velie.....	110, 174
Spring, Vehicle.....	J. Goller.....	99, 558
Spring, Vehicle.....	J. H. Gould.....	109, 406
Spring, Volute.....	J. Trent.....	103, 944
Spring, Wagon.....	L. L. Gordon.....	99, 771
Spring, Wagon.....	J. N. Crannell.....	100, 122
Sprinkler, Clothes.....	T. R. Smith and J. Mitchell.....	99, 021
Sprinkler, Portable.....	W. L. Fish.....	106, 802
Sprinkler, Street.....	J. A. Bancroft.....	101, 700
Square, Adjustable.....	S. F. Wesmer.....	110, 316
Square, protractor, level, &c., Combined.....	J. A. Littlefield.....	101, 477
Square-sail for fore-and-aft vessel.....	A. A. Holling.....	108, 706
Squares, &c., Machine for graduating.....	C. S. Bement.....	104, 249
Square, Universal.....	D. M. Moore.....	102, 957
Squeezing puddlers' balls, Machine for.....	S. Danks.....	109, 186
Stable-cleaner.....	T. F. Longaker.....	106, 181
Stables, Machine for cleaning.....	T. F. Longaker.....	100, 778
Stacking-machine, Straw.....	W. Boggs.....	100, 716
Staff, Musical.....	H. Wright.....	104, 393
Stair and floor plate.....	P. W. Neefus.....	109, 651
Stair-plate, Metallic and elastic.....	P. W. Neefus.....	109, 649
Stair-rails, Machine for jointing.....	J. B. Margeson.....	108, 803
Stair-rod.....	W. M. Clayton.....	100, 858
Stair-rod.....	H. Uhry.....	101, 063
Stair-rod.....	H. Uhry.....	101, 064
Stair-rod.....	W. T. Mersereau.....	107, 941
Stalk and weed cutter and land-roller, Combined.....	W. Leslie.....	108, 712
Stall for preventing cribbing.....	J. Kraus.....	105, 814
Stamp-canceler.....	E. E. Hendrick.....	104, 148
Stamp-canceler.....	F. W. Brooks.....	104, 701
Stamp-canceler.....	H. W. Dopp.....	105, 052
Stamp-canceler.....	J. B. Rogers.....	106, 963
Stamp-canceler.....	J. Goldsborough.....	110, 227
Stamp, Canceling.....	W. A. Wheeler.....	100, 225
Stamp, Canceling.....	G. C. Noyes.....	108, 619
Stamp for fruit-cans.....	J. Kinzer.....	103, 056
Stamp, Hand.....	A. L. Munson.....	101, 649
Stamping, pressing, and pointing horseshoe-nails, Machine for.....	F. Sandham.....	109, 844
Stamps, drafts, and checks, Ink for printing.....	J. P. Simonds.....	101, 170
Stanchion for securing cattle.....	E. S. Alvord.....	102, 904
Stanchion, Swinging.....	W. C. Gifford.....	105, 445
Stand and clothes-drier.....	M. E. Charles.....	103, 565
Stand and waiter.....	G. Gill.....	106, 051
Standard for drop-light.....	J. Horton.....	104, 155
Stand for cleaning window.....	E. Herdster.....	107, 493
Stand for tea and coffee pots.....	J. H. Bigelow.....	101, 813
Stannate of potash, Treating tin-scrap for the manufacture of.....	A. Ott.....	107, 711
Staple-machine.....	C. W. Kennedy.....	101, 471
Staple-machine.....	J. T. Darnell.....	102, 659
Staples, Machine for making.....	J. C. Stead.....	108, 735
Starch, Manufacture of spirits from.....	Herrmann Koehler.....	107, 787
Starter, Street-car.....	B. Lepper.....	103, 897
Station-indicator.....	L. Nelke.....	109, 751
Station-indicator for railroad-cars.....	W. Hebdon.....	103, 179
Stave-basket, Manufacture of.....	H. C. Jones.....	100, 902
Stave-bender.....	J. Merrill.....	105, 110
Stave-dressing machine.....	M. P. Adams.....	102, 467
Stave-jointer.....	R. W. George.....	105, 064
Stave-jointer.....	J. F. Sayer.....	106, 874
Stave-jointer.....	J. B. Bell.....	106, 988
Stave-jointer.....	J. Newman.....	110, 271
Stave-jointing machine.....	A. Cutter.....	103, 151
Stave-jointing machine.....	W. Widdowson.....	106, 014
Staves, Machine for finishing.....	A. Cutter.....	104, 121
Staves, Machine for jointing.....	S. G. Gray.....	107, 678
Stay-brace for trunks.....	J. Roch.....	100, 451
Stay for trunk.....	L. Hillebrand.....	103, 181
Stay for trunk-lids.....	D. C. O'Connor.....	100, 060
Steam and other packing, Lubricating compound for.....	W. M. Cantfield.....	110, 432
Steam and water separator for steam-engines.....	C. E. Emery.....	100, 512
Steam and water supply and pressure-regulator.....	J. C. Hagan.....	108, 905
Steam-bath apparatus, Medicated.....	L. Heine and C. Scholfield.....	104, 307
Steam-boiler blow-off pipe.....	J. C. McLaughlin.....	104, 178
Steam-boilers and tanks, Construction of.....	H. J. Stein.....	107, 976
Steam-boilers, Compound for preventing and removing incrustations in.....	W. H. Burrigdo.....	103, 974



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Steam-boilers, metals, &c., Compound and process of removing incrustations of lime from.	J. A. Hewett.....	110, 463
Steam-boilers, Non-conducting composition for covering.	J. D. Van Arnum and W. Ives.....	98, 818
Steam-boilers, Preventing incrustation of.....	C. J. A. Dick.....	110, 553
Steam-cylinder, rotary, Packing-box for.....	S. Deacon and J. Russell.....	109, 722
Steam-engine connection.....	L. Phleger.....	103, 649
Steam-engine, Exhaust-nozzle for.....	W. A. Foster.....	107, 605
Steam-engine governor cut-off.....	G. Millbank.....	99, 220
Steam-engine, Governor for.....	R. K. Huntton.....	109, 013
Steam-engine or pump, Rotary.....	G. S. Foliansbee.....	106, 804
Steam-engine, Oscillating.....	I. N. Forrester.....	110, 352
Steam-engine, Reaction rotary.....	F. E. Mills.....	107, 078
Steamer, Agricultural.....	H. W. Millar.....	102, 028
Steamer, Culinary.....	J. H. Heritage.....	99, 316
Steam-gauge, Registering.....	E. Clark.....	101, 583
Steam-generating apparatus.....	M. Wood.....	110, 321
Steam-jet boiler-tube cleaner.....	R. C. Hussey.....	110, 044
Steam-pistons, Mode of cushioning.....	G. F. Blake.....	101, 217
Steam-puller.....	J. M. Ferguson.....	107, 891
Steam-pump, Valve-gear for.....	J. C. King.....	107, 504
Steam-trap.....	S. D. Tripp.....	108, 215
Steam-whistle.....	W. S. Cooper.....	109, 388
Steel, Composition for welding and restoring.....	T. Fyans.....	108, 129
Steel, Converting articles of iron into.....	H. C. Folsom.....	101, 250
Steel, Converting cast iron and cast-iron articles into.....	R. A. Jackson.....	107, 781
Steel from cast or pig iron, Manufacture of.....	H. M. Baker.....	101, 969
Steel-headed rails, Manufacturing a fagot for.....	J. Absterdam.....	98, 537
Steel, Manufacture of.....	J. Baur.....	99, 624
Steel, Manufacture of.....	O. E. Hunter.....	101, 624
Steel, Manufacture of.....	C. M. Nes.....	102, 146
Steel, Manufacture of.....	W. Fields.....	102, 796
Steel, Manufacture of.....	F. G. Slade.....	103, 094
Steel, Manufacture of.....	C. M. Nes.....	104, 873
Steel, Manufacture of.....	C. M. Nes.....	108, 287
Steel, Process for tempering.....	J. Jenkins.....	102, 550
Steels, Device for attaching to corsets.....	W. A. and H. E. Starrett.....	107, 974
Steelyard.....	W. B. Preston.....	100, 066
Steering-apparatus.....	E. G. Green.....	100, 750
Steering-apparatus.....	C. M. Hayden.....	104, 955
Steering-apparatus.....	D. De Haven.....	105, 436
Steering-apparatus.....	G. Seymour.....	106, 217
Steering-apparatus.....	C. G. Gumpel.....	106, 358
Steering-apparatus.....	T. C. Purington.....	107, 719
Steering-apparatus for torpedo-boats, &c.....	J. A. Ballard.....	107, 326
Steering-apparatus, Steam.....	H. P. Hicks.....	103, 458
Steering-propeller.....	F. G. Fowler.....	98, 483
Stench-trap, Casting.....	J. L. White.....	109, 786
Step and bolster for cotton-spindles.....	C. H. Chapman.....	99, 534
Step for spindle to spinning-machines.....	J. P. Hillards.....	99, 087
Step for street-car.....	A. A. Duly.....	98, 750
Step-ladder, Extension platform.....	G. A. Schachtel.....	109, 256
Step-spindle.....	E. Dougherty.....	101, 109
Step-support for mill-spindles.....	J. Russell.....	99, 353
Stereoscope.....	A. Beckers.....	99, 136
Stereoscope, Box.....	S. T. Jennings.....	103, 817
Stereoscope, Folding.....	E. K. Page.....	104, 990
Stereoscope, Revolving.....	A. Beckers.....	99, 135
Stereotype-matrices, Machine for preparing.....	W. T. Morgans.....	108, 813
Stereotyping.....	A. Chase.....	108, 879
Still, Alcohol and spirit.....	J. Dawson.....	105, 783
Still for distilling hydrocarbons.....	J. B. Edwards.....	100, 874
Still for hydrocarbons.....	S. A. Hill and C. F. Thumm.....	101, 364
Still for hydrocarbons.....	S. A. Hill and C. F. Thumm.....	101, 365
Still for hydrocarbons, &c.....	J. Gracie.....	99, 081
Still for petroleum.....	J. Warren.....	102, 186
Still for petroleum and other oils.....	S. Van Syckel.....	110, 516
Still for spirits.....	E. Melton.....	104, 752
Still for whisky and other spirits.....	H. G. Dayton.....	98, 853
Still, Fruit and alcohol.....	J. A. Campbell.....	105, 547
Still, Oil.....	J. Hofferberth.....	105, 683
Stirrer and egg-beater.....	C. Lehmann.....	101, 281
Stirrup.....	A. H. Blossom.....	105, 893
Stirrup and spur for saddles.....	H. Fellows.....	99, 767
Stirrup, Saddle.....	J. A. Dunnagan.....	103, 031
Stirrups, Machine for bending.....	D. Forest.....	99, 303
Stock-barn.....	J. Tyler.....	106, 095
Stocking.....	F. Woodward.....	106, 017
Stocking-last and yarn and needle holders combined.....	D. B. Keith.....	109, 519
Stockings, &c., machine-knit, Method of producing selvages on.....	H. A. House.....	101, 016

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Stocking-supporter and skeleton-waist combined .....	A. M. Stiger .....	106,885
Stocking, Water-proof .....	F. Curtis .....	99,412
Stone and stump extractor .....	J. B. Lyons .....	100,165
Stone, artificial, &c., Machine for mixing the materials to form .....	J. S. Elliott .....	110,023
Stone, artificial, Manufacture of .....	J. M. Ordway .....	98,517
Stone, artificial, Manufacture of .....	F. Coignet .....	99,062
Stone, artificial, Manufacture of .....	S. Sorel .....	100,945
Stone, artificial, Manufacture of .....	A. H. Frear .....	101,253
Stone, artificial, Manufacture of .....	C. Stephens .....	103,520
Stone, artificial, Manufacture of .....	C. Schaeffer .....	105,132
Stone, artificial, Manufacture of .....	W. A. Battersby .....	105,889
Stone, artificial, Manufacture of .....	W. H. Foye .....	109,607
Stone, artificial, Manufacture of .....	J. L. Rowland .....	109,669
Stone, artificial, Press for the manufacture of .....	L. Dodge .....	109,397
Stone, artificial, Removing soluble salts from .....	E. L. Ransome .....	108,627
Stone, brick, &c., Preserving and hardening .....	E. J. Salisbury .....	102,869
Stone-channeling machine .....	V. W. Blanchard .....	99,139
Stone-channeling machine .....	G. J. Wardwell .....	105,391
Stone-cutting machine .....	H. Young .....	99,513
Stone-cutting machine .....	H. and J. L. Young .....	108,228
Stone-cutting machine .....	H. Young .....	108,424
Stone-dressing machine .....	J. Coulter and H. Harpin .....	98,850
Stone, Machine for breaking .....	A. Dietz .....	107,769
Stone, Machine for cutting .....	H. and J. L. Young .....	107,847
Stone, Machine for cutting and dressing .....	A. M. Arbroath and W. B. Adamson .....	104,055
Stone, Machine for dressing .....	A. G. Anderson .....	105,159
Stone, Machine for sawing .....	L. Ward .....	108,307
Stone, metal, glass, &c., Cutting and engraving .....	B. G. Tilghman .....	108,408
Stone-sawing machine .....	G. Morgan .....	105,359
Stones, &c., Separating, from clay .....	D. J. Hunter .....	107,053
Stone, Tool for cutting .....	H. Young .....	108,425
Stone-working machine .....	F. Schlickenyson .....	107,820
Stool and traveling bag .....	J. Salisbury and B. Wilbur .....	109,058
Stool, Life-preserving .....	H. T. Pratt .....	100,891
Stool, Milking .....	E. Martin and S. M. Chittenden .....	99,098
Stool, Milking .....	G. W. Haviland .....	104,452
Stool, Milking .....	G. Smith .....	109,847
Stool-stand and show-case .....	E. B. Fenton and H. S. Penfield .....	105,559
Stop-cock .....	J. Seeberger .....	99,714
Stop-cock .....	J. Breeden .....	100,113
Stop-cock for steam and liquids .....	J. Breeden .....	101,977
Stop for billiard-wires .....	E. O. Dow .....	100,509
Stop for caster for stove-leg, Adjustable .....	W. Coughlin .....	107,762
Stop for curtain-rollers .....	R. Wangeman .....	98,532
Stop for the hinged frame of reclining-chairs .....	J. G. Holmes .....	98,867
Stop-motion for steam-engines .....	J. Storer .....	104,659
Stopper for jars and bottles .....	H. W. Ketcham .....	102,129
Stopping and starting mill-burrs .....	W. Crawford and S. Clark .....	101,105
Stop-valve .....	S. H. Brown .....	101,425
Stop-valve for petroleum-packages .....	A. Warth .....	102,187
Stop-valve for steam and other machinery .....	S. J. Peet .....	99,943
Stop-valve for steam and other machinery .....	S. J. Peet .....	99,944
Stop-valve, Hydraulic .....	C. S. Bailey .....	103,371
Stop-watch .....	F. Rotig .....	103,505
Store and household grapple .....	J. Seltzer .....	101,772
Storing powder in pneumatic locomotives .....	H. F. C. Krumme .....	101,631
Store-room and pantry, Portable .....	T. A. Barrel .....	110,538
Store-shelving .....	R. Poole .....	108,823
Store-shelving, Moveable .....	G. and W. Koch .....	104,041
Stove .....	B. Nott .....	98,879
Stove .....	A. Brase & Salladey .....	103,839
Stove and range, Cooking .....	W. and G. Gardner .....	101,116
Stove, Base-burning .....	J. Q. C. Searle .....	98,806
Stove, Base-burning .....	N. A. Boynton .....	98,915
Stove, Base-burning .....	J. H. Keyser .....	99,091
Stove, Base-burning .....	T. Z. Obermeyer and W. Hallo .....	99,225
Stove, Base-burning .....	H. B. Van Benthuysen .....	99,375
Stove, Base-burning .....	J. A. Price .....	99,590
Stove, Base-burning .....	J. H. Goodfellow .....	100,138
Stove, Base-burning .....	J. Spear .....	100,335
Stove, Base-burning .....	W. Magill .....	100,427
Stove, Base-burning .....	H. G. Giles .....	101,000
Stove, Base-burning .....	H. G. Giles .....	101,001
Stove, Base-burning .....	W. J. Keep .....	101,368
Stove, Base-burning .....	D. J. Littlefield .....	101,476
Stove, Base-burning .....	A. White .....	101,688
Stove, Base-burning .....	W. J. Keep .....	102,682
Stove, Base-burning .....	G. A. Wing .....	105,535
Stove, Base-burning .....	J. H. Meissner .....	105,587
Stove; Base-burning .....	A. G. Webster .....	106,435

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Stove, Base-burning	M. Peckham	106, 503
Stove, Base-burning	B. Nott	106, 609
Stove, Base-burning	I. Snyder and P. C. Garrett	110, 083
Stove, Base-burning	H. C. March	110, 258
Stove, Base-burning	W. Kaiser	110, 472
Stove, Base-burning fire-place	S. B. Sexton	101, 385
Stove, Base-burning, for a steam-heating boiler	W. B. Dunning	101, 718
Stove, Base-burning, for shavings and other light fuel	O. Clarke	100, 982
Stove, Base-burning parlor cooking	W. Doyle	100, 992
Stove, Coal	H. J. Frizelle	98, 580
Stove, Coal	J. H. Keyser	99, 092
Stove, Coal	G. Rodney	99, 100
Stove, Coal	M. L. Horton	100, 406
Stove, Coal	J. Spear	102, 328
Stove, Coal	J. Laforge and J. T. Crane	102, 558
Stove, Coal	D. W. C. Clark and H. W. Cady	104, 269
Stove, Coal	J. Hackett	105, 672
Stove, Coal	J. R. Webber	106, 750
Stove, coal, Base-burning	A. C. Corse	107, 597
Stove, coal, Hot-air drum for	G. J. Bentley	102, 210
Stove, Coal-oil	J. H. Thorp	103, 526
Stove, coal, Window for	A. White	104, 911
Stove, Cook	W. C. Davis	108, 240
Stove, Cooking	C. W. Hermance	98, 964
Stove, Cooking	M. J. Mosher	98, 994
Stove, Cooking	C. Van De Mark	99, 264
Stove, Cooking	G. M. Eckert	99, 419
Stove, Cooking	L. Hermance	99, 436
Stove, Cooking	A. White	99, 613
Stove, Cooking	D. Stuart	99, 969
Stove, Cooking	P. W. Hertick	101, 127
Stove, Cooking	G. H. Phillips	101, 159
Stove, Cooking	W. Stevenson	101, 177
Stove, Cooking	R. M. Hermance	102, 462
Stove, Cooking	H. G. Giles	102, 533
Stove, Cooking	E. Kirk	102, 683
Stove, Cooking	F. H. Root	103, 083
Stove, Cooking	S. Hoffman	103, 204
Stove, Cook ng	A. G. Patten	103, 235
Stove, Cooking	W. C. Davis and J. W. Garrison	103, 306
Stove, Cooking	C. Temme	103, 389
Stove, Cooking	J. Greer and R. J. King	103, 449
Stove, Cooking	B. F. Johnson	103, 621
Stove, Cooking	J. M. Reed	103, 655
Stove, Cooking	E. Buys	103, 715
Stove, Cooking	W. Hailes	104, 021
Stove, Cooking	S. S. Jewett and F. H. Root	104, 461
Stove, Cooking	J. B. Wilkinson	104, 807
Stove, Cooking	B. F. Warren	105, 746
Stove, Cooking	F. Ritchie	106, 208
Stove, Cooking	J. M. Goodfellow	106, 688
Stove, Cooking	W. B. Mackenzie	106, 946
Stove, Cooking	J. H. McConnell	107, 394
Stove, Cooking	J. H. Jones	108, 152
Stove, Cooking	E. L. Thompson and A. Hursh	108, 211
Stove, Cooking	L. D. Webber	108, 219
Stove, Cooking	A. Wemyss	108, 220
Stove, Cooking	A. Traver	108, 410
Stove, Cooking	G. W. Walker	108, 852
Stove, Cooking	W. Hailes	110, 230
Stove, Cooking	J. Pratt and J. H. Wentworth	110, 282
Stove, Cooking	D. Stuart and L. Bridge	110, 305
Stove, Cooking	D. Stuart and L. Bridge	110, 400
Stove, Cooking	M. Pratt	110, 588
Stove, cooking, Base-burning	T. P. Rossiter	107, 629
Stove, cooking, Portable	E. Evans	106, 040
Stove, cooking, Summer	A. H. Wellington	99, 040
Stove-cover, dish and kettle lifter	C. Cole	104, 272
Stove, Cylinder	J. Currier and A. Pevey	105, 179
Stove-door	E. Weston	105, 393
Stove door and hearth, Combined	J. A. Price	104, 493
Stove-drum	T. Scantlin	101, 316
Stove-fastener	J. C. Burdin	108, 105
Stove, Fire-place	P. Klotz	109, 022
Stove, fire-place, Base-burning	S. R. Sexton	103, 510
Stove for burning stumps	H. Willard	99, 801
Stove for railroad-cars	M. T. Hitchcock	100, 404
Stove for railroad-cars	G. Beeman	102, 080
Stove, Furnace	J. Old	110, 274
Stove, Heating	W. M. Phelps and S. J. Burpee	98, 862
Stove, Heating	W. F. Ross	99, 954

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Stove, Heating.....	J. Moore.....	101, 375
Stove, Heating.....	H. Besse.....	101, 429
Stove, Heating.....	M. C. Hull.....	101, 733
Stove, Heating.....	D. L. Stiles.....	102, 726
Stove, Heating.....	M. C. Burleigh.....	102, 767
Stove, Heating.....	F. G. Cochran.....	102, 777
Stove, Heating.....	R. Hillson.....	103, 884
Stove, Heating.....	N. S. Vedder.....	104, 084
Stove, Heating.....	J. F. Still.....	104, 225
Stove, Heating.....	T. J. Coulston.....	104, 274
Stove, Heating.....	J. Grossius.....	104, 581
Stove, Heating.....	C. E. Warring.....	104, 801
Stove, Heating.....	G. A. Blake and W. B. Taylor.....	104, 925
Stove, Heating.....	C. L. Svensson.....	105, 737
Stove, Heating.....	S. H. La Rue.....	105, 816
Stove, Heating.....	A. Lotze.....	107, 696
Stove, Heating.....	N. Parish.....	107, 806
Stove, Heating.....	W. Magill.....	108, 163
Stove, Heating.....	A. Traver.....	108, 212
Stove, Heating.....	I. De Haven.....	108, 459
Stove, Heating.....	A. Diekey.....	109, 396
Stove, Heating.....	G. B. Isham.....	109, 627
Stove, Heating.....	L. A. Morse.....	109, 749
Stove, Heating.....	T. Young.....	110, 104
Stove, Heating.....	A. Traver.....	110, 312
Stove-illuminator.....	G. G. Hunter.....	104, 158
Stove, Kerosene.....	R. B. Mitchell.....	107, 079
Stove-leg.....	W. R. Oatley.....	99, 697
Stove-leg.....	E. Card.....	101, 428
Stove-leg.....	E. Evans.....	102, 930
Stove-leg.....	F. Whalen.....	105, 748
Stove-leg.....	D. L. Bates.....	106, 650
Stove-leg.....	S. E. Chubbuck.....	107, 874
Stove-leg fastener.....	F. Moon.....	103, 354
Stove lid and cover, Combined.....	T. J. Coulston.....	104, 273
Stove-lining and fire-brick.....	C. Muir.....	99, 934
Stove, parlor and cooking, Combined.....	W. W. S. Orbeton.....	110, 359
Stove, Parlor cook.....	D. L. Stiles.....	99, 491
Stove-pipe.....	W. P. Lewis.....	106, 269
Stove-pipe attachment.....	O. B. and G. E. Bartlett.....	102, 751
Stove-pipe band and shelf.....	R. Hoover.....	107, 260
Stove-pipe damper.....	H. Baker.....	99, 048
Stove-pipe damper.....	W. J. Keep.....	103, 641
Stove-pipe damper.....	G. Hollinger and S. H. Fry.....	102, 266
Stove-pipe damper.....	W. J. Keep.....	102, 407
Stove-pipe damper.....	R. M. Hermance.....	102, 539
Stove-pipe damper.....	W. Taylor.....	103, 686
Stove-pipe damper.....	D. Sanders.....	104, 889
Stove-pipe damper.....	F. Rossman.....	106, 410
Stove-pipe damper and ventilator.....	A. R. Burdick.....	100, 369
Stove-pipe drum.....	G. W. Lore.....	98, 813
Stove-pipe drum.....	E. D. Roberts.....	100, 557
Stove-pipe drum.....	J. Heger.....	102, 119
Stove-pipe elbow.....	P. J. Biesenbach.....	98, 659
Stove-pipe grate.....	J. O'Malley.....	109, 043
Stove-pipe holes, Cover for.....	J. A. Reed.....	107, 722
Stove-pipe joint.....	H. B. Morrison.....	99, 459
Stove-pipe shelf.....	J. H. Gerhart and J. S. McCord.....	98, 582
Stove-pipe shelf.....	J. Smythe and C. Dexter.....	99, 489
Stove-pipe shelf.....	J. W. Wilder.....	101, 799
Stove-pipe shelf.....	G. Newcomer.....	101, 906
Stove-pipe shelf.....	R. R. Gorton.....	103, 327
Stove-pipe shelf.....	J. H. Shant.....	107, 825
Stove-pipe shelf, heater, and damper.....	E. Hall and F. D. Searle.....	102, 414
Stove-pipes, Water-heating attachment for.....	N. Rowe.....	101, 923
Stove-pipe thimble.....	P. H. Rose and M. B. Hudson.....	102, 014
Stove-pipe thimble.....	J. D. Pierce and J. B. Smith.....	109, 538
Stove-plates, Casting lugs in.....	J. M. Fife.....	102, 933
Stove-plates, Construction of.....	A. Wernet and J. Kershaw.....	100, 699
Stove, Portable.....	M. S. Harshaw and W. M. Van Nort- wick.....	106, 059
Stove, Railroad-car.....	S. Meredith.....	101, 753
Stove, Railroad-car.....	J. Q. C. Searle.....	105, 260
Stove, Railroad-car.....	J. M. Comins.....	106, 124
Stove, Railway-car.....	J. Oliphant.....	103, 143
Stove-register, Automatic.....	J. S. Toon.....	103, 689
Stove, Safety.....	C. J. Smith.....	103, 672
Stoves, &c., Composition for blacking.....	T. C. Scottron and S. Plummer.....	106, 877
Stoves, &c., Illuminator for.....	B. Nott.....	99, 339
Stoves and ranges, Fire-box for.....	M. L. Horton.....	110, 467

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Stoves, Attachment for heating	J. L. Pfau	102, 036
Stoves, Base-burning	J. S. Perry and A. Dickey	100, 322
Stoves, cooking, Oven-plate for	W. C. Davis	109, 187
Stoves, cooking, Reservoir for	A. Ransom	101, 916
Stoves, cooking, Water-reservoir for	E. Bussey	99, 529
Stove, Self-feeding wood and coal cooking	J. F. Pond	99, 472
Stove-shelf	J. G. Krichbaum	99, 916
Stove-shelf	J. R. Robertson	100, 073
Stove shelf and drier	J. J. Watson	100, 571
Stoves, Mica-frame for	G. S. Stanard	103, 674
Stoves, Platform for	C. Brownell	105, 773
Stoves, Vapor-generating burner for	D. E. Ryan	107, 816
Stoves, Ventilating-attachment for	W. M. Eames	184, 286
Strainer for coffee-pot	C. L. Gilpatric	100, 137
Strap-fastener	W. R. Wing	102, 640
Strap for barrels, Tightening	S. Macferran	110, 255
Straw and feed cutter	A. Werner	106, 975
Straw and other paper board, Manufacture of	B. F. Field	195, 790
Strawberry-huller	J. W. D. Patten	104, 919
Straw-boards, Machine for attaching thin paper to	M. Fitzgibbons	103, 319
Straw-carrier and thrashing-machine	C. Russell and W. K. Miller	103, 086
Straw, Elevator for raising and stacking	S. Lewin	109, 523
Straw goods, Bleaching	A. M. Rosbrugh	102, 868
Street-car bells, Device for ringing	C. Carr	101, 580
Street-car, Device for starting	G. P. Frick	108, 127
Street-car, Double and single tree attachment for	J. F. Lowe	109, 029
Street-car, Pneumatic	D. Myers	108, 380
Street-cars, Device for propelling	S. Jones and B. Terfloth	105, 088
Street-cars, Motive-power for driving	P. E. McDonnell	106, 600
Street-indicator for city cars	W. Brown	107, 440
Street-lamp, Vapor-burning	C. E. Smith and H. J. Rice	106, 630
Street-sweeping machine	A. A. Consalve	104, 707
Stretcher for picture-frame	J. D. Crocker	106, 332
Stretching-frame	J. Tonner	109, 690
Strike for locks	W. Weisner	99, 039
Stripping the top flats of carding-machines, Mechanism for	F. Morf	102, 851
Stud-nipper	G. T. Shepley	103, 934
Studs or buttons, Fastening for	E. M. Deey	100, 988
Studs or tubular-shanked buttons, Machine for attaching, to fabrics	J. H. Lewis	109, 227
Stuffing-box	A. J. Prescott	110, 392
Stump-extractor	A. Gummer	93, 311
Stump-extractor	J. Higgins	100, 529
Stump-extractor	H. Schwartz	100, 674
Stump-extractor	W. O. Johnson	100, 770
Stump-extractor	J. M. Eason	102, 516
Stump-extractor	G. L. and W. M. Howland	102, 544
Stump-extractor	C. Gernes and J. H. Gruenhagen	103, 171
Stump-extractor	E. Farnsworth	104, 003
Stump-extractor	C. Bilharz	104, 692
Stump-extractor	E. Farnsworth	106, 926
Stump-extractor	J. Higgins	107, 906
Stump-extractor	L. B. Gibson	108, 901
Stump-extractor	S. Harman	109, 316
Stump-extractor	W. Smith	109, 466
Stump-extractor and rock-lifter	S. Smith	98, 642
Stump-joint for carriage-top braces	F. Van Patten and E. D. Clapp	109, 782
Stump-puller	G. Utley	106, 238
Stumps, Machine for extracting	J. A. Jenkins	109, 015
Sub-base reed-organ coupler	G. Cook	103, 019
Subsoil-attachment for plow	A. F. Roberts	108, 939
Subsoil-pulverizer	G. S. Newsom	106, 195
Sucker-rod connection	G. M. Backus	105, 410
Sucker-rod drawer for deep wells	J. P. Smith	109, 464
Sucker-rod joint	A. Good, jr.	104, 576
Sugar and alcohol from lichens, Manufacture of	S. Stenberg	101, 783
Sugar, Apparatus for the manufacture of	J. W. Hahn	109, 314
Sugar draining and molding machine, Centrifugal	P. Tully	105, 520
Sugar-draining machine, Centrifugal	H. W. and R. Lafferty	106, 491
Sugar, Manufacture of	J. Poey	102, 969
Sugar, Manufacture of	C. Rosswog	103, 090
Sugar, Manufacture of	J. Poey	108, 514
Sugar, Manufacture of	A. Weichert	108, 816
Sugar or sirup from sweet-potatoes, Manufacture of	C. Delamarre	109, 991
Sugar, Process of extracting, manufacturing, and refining	J. E. Boivin and D. Loiseau	99, 141
Sugar-refining	J. Rogers and L. Reid	105, 254
Sugar, Refining, by steam	F. Schleifer	108, 732
Sulky	J. Kenkins	108, 911
Sulky, One-wheel	J. A. Sinclair	99, 114

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Sulky, Spring .....	E. Milner .....	104, 626
Sun-bonnet for horses .....	J. Anderson .....	100, 000
Sun-dial .....	L. I. Truog .....	100, 691
Sun-dial, Pocket .....	D. L. Smith .....	106, 735
Sun-shade for horses .....	E. T. Balch .....	99, 282
Super-heater for gas-works .....	M. L. Callender .....	108, 328
Supplying pure water to buildings, Process and apparatus for.	J. A. Thompson .....	101, 544
Supporting-prop for folding buggy-tops .....	A. Dom .....	109, 116
Surfaces, metallic, Inlaying .....	E. G. Wright .....	100, 580
Surge-reliever .....	J. E. Jones .....	107, 917
Surveying-machine, Self-recording .....	H. Munger .....	103, 479
Suspender .....	B. J. Greely .....	100, 886
Suspender .....	T. W. Bartholomew .....	101, 211
Suspender .....	E. Oldfield .....	102, 424
Suspender .....	J. W. Smith .....	108, 841
Suspender .....	J. W. Wattles .....	109, 853
Swaging-machine .....	G. M. Hinckley .....	108, 140
Sweep, Horse-power .....	R. J. M. King .....	102, 015
Sweet-potatoes, Machine for digging .....	R. Darlington and E. L. Watson .....	99, 859
Sweet-potatoes, Preserving .....	H. T. Basye .....	110, 108
Swift and reel .....	C. Parks .....	102, 309
Swift and reel, Combined .....	C. H. Clark .....	105, 905
Swine, Apparatus for feeding .....	N. Stockwell .....	98, 718
Swing .....	L. Winston .....	109, 165
Swing, Portable .....	M. D. Brine .....	101, 576
Swing, Revolving .....	A. Graves .....	101, 609
Switches, railway, Automatic .....	L. E. Kurtz .....	103, 202
Switch for electrical batteries, Compound .....	J. Kidder .....	105, 697
Switch for galvanic battery .....	E. M. Pierson .....	108, 513
Switch, Railroad .....	J. L. Arms .....	100, 101
Switch, Railway .....	W. H. Staats .....	102, 724
Switch, Railway .....	G. W. Lee, J. A. Lafontaine, and A. L. Harris .....	104, 860
Switch, Railway .....	J. Davis .....	106, 131
Switch, Railway .....	J. P. Herron .....	106, 266
Switch, Railway .....	J. H. Stockton .....	106, 423
Switch, Railway .....	J. T. Guthrie and L. Pausch .....	106, 480
Switch, Railway .....	C. S. Smith .....	107, 103
Switch, Railway .....	J. Miner and S. Merrick .....	109, 141
Switch-signal .....	H. A. Efner and C. Boynton .....	100, 018
Switch-stand .....	C. C. Dodge .....	106, 259
Swivel for temper-screws .....	T. Graham .....	101, 726
Swivel-shackle .....	W. Williams .....	99, 508
Syringe .....	G. Conover .....	108, 111
Syringe, Vaginal .....	W. B. Snyder .....	102, 985
T.		
Table .....	L. Freeman .....	98, 948
Table .....	T. J. Shannon .....	99, 246
Table .....	E. Brücker .....	106, 318
Table .....	C. T. Sutton .....	103, 387
Table .....	G. E. Young .....	106, 646
Table .....	G. H. Henkel .....	107, 258
Table .....	J. Taft .....	108, 406
Table .....	D. M. Reynolds .....	109, 051
Table .....	G. J. Congle .....	110, 013
Table and bureau, Ironing .....	M. White .....	104, 385
Table and counter .....	S. Simonson .....	102, 977
Table-attachment, Auxiliary .....	J. Blake .....	108, 000
Table, Bakers' .....	A. S. Maxwell .....	108, 373
Table, Billiard .....	I. N. Swasey .....	110, 306
Table, Cabin .....	H. J. Nichols .....	106, 608
Table, Combination of billiard and dining .....	F. E. Held .....	100, 401
Table, Cooking .....	E. D. Dodge .....	107, 015
Table, Dining .....	J. L. Knight .....	103, 625
Table, Dining .....	M. P. Boyd .....	106, 460
Table, Dining .....	R. C. Case .....	108, 878
Table, Dining .....	D. Boardman .....	109, 107
Table, Extension .....	W. J. Boda .....	98, 465
Table, Extension .....	W. Farson .....	98, 942
Table, Extension .....	W. Reichenbach and F. Roschdiantzky .....	100, 446
Table, Extension .....	C. P. Lenz .....	100, 776
Table, Extension .....	S. Tilton .....	101, 545
Table, Extension .....	A. Dietsch .....	102, 235
Table, Extension .....	M. Baneroft .....	107, 215
Table, Extension .....	T. C. Ellison .....	110, 220
Table, Extension, and settee .....	M. Debbell .....	107, 463
Table, Fall-leaf .....	W. Caldwell .....	102, 771
Table, Folding .....	A. Windeck .....	106, 906



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Table for changing gauge of railway car-trucks.....	G. F. Morse.....	101, 758
Table for dovetailing-machine.....	J. Dill.....	104, 943
Table for silvering glass, Heating.....	H. B. Walker.....	108, 413
Table, Ice-crushing.....	S. H. and D. W. Davis.....	98, 852
Table, Ironing.....	S. Merritt.....	99, 219
Table, Ironing.....	J. H. Ruff.....	106, 509
Table, Ironing.....	J. F. Martin and W. A. Shaffner.....	107, 271
Table, Ironing.....	H. McChesney.....	107, 940
Table, Ironing.....	J. H. Mallory.....	109, 918
Table, Ironing.....	J. J. Märki.....	110, 577
Table, ironing, Folding.....	J. H. Mallory.....	100, 430
Table, Kitchen.....	F. Ehrhardt.....	98, 751
Table-leaf support.....	W. R. Briggs.....	99, 829
Table-leaf support.....	A. Anderson.....	100, 965
Table-leaf support.....	A. Forrest.....	102, 528
Table-leaf support.....	G. L. Gerard.....	106, 353
Tablet, Revolving.....	W. H. Henderson and W. S. Jones.....	107, 257
Table-saw.....	M. Lepp.....	103, 347
Tables, &c., Attaching sponge-holder to.....	C. S. See.....	104, 214
Tables, &c., Device for leveling.....	B. W. Bull.....	106, 317
Table, Self-waiting.....	W. W. Hawley.....	100, 622
Tables, extension, Slide for.....	S. Stilwell.....	107, 636
Table, Sheep-shearing.....	J. R. Marshall.....	100, 170
Table slide, Extension.....	M. Fleck.....	99, 075
Table slide, Extension.....	H. Olds.....	104, 340
Tables, Support for.....	J. Blake.....	106, 109
Tables, Support for.....	J. Blake.....	106, 110
Tablet for tombs.....	H. F. Bailey.....	101, 567
Tablet, token, or check to be used in life-insurance.....	H. A. Jones.....	100, 638
Table, Work.....	F. M. B. Clark.....	108, 449
Tack, Double-pointed.....	P. Miles.....	104, 183
Tackle-block.....	J. F. Harcourt.....	106, 933
Tackle-block.....	R. J. Smith.....	109, 260
Tacks and nails, Coating with copper.....	H. W. Wright.....	106, 977
Tacks, double-pointed, Machine for making.....	P. Miles.....	104, 184
Tag.....	T. J. Southworth and W. H. Lawton.....	109, 263
Tag-attachment.....	T. P. Marston.....	99, 334
Tag-fastener.....	H. Fisher.....	102, 800
Tag for shoe-string.....	J. Twanley.....	104, 229
Tag-holder.....	E. C. Ten Eycke.....	101, 650
Tag-label.....	D. W. Foley.....	102, 461
Tag-machine.....	C. H. Chapman.....	100, 253
Tail-race for water-wheel, Inclosed.....	W. A. Cobb.....	104, 427
Take-up detaining-pawl.....	G. Richardson.....	109, 345
Take-up nut.....	T. Ross and W. W. Graham.....	109, 348
Tamping-device for blasting purposes.....	J. Shoemaker.....	108, 397
Tamping-plugs for blasting.....	E. Gomez.....	102, 250
Tank for raising sunken vessels.....	F. W. Beers.....	102, 359
Tank for rendering lard.....	D. Pinger.....	100, 063
Tank for holding compressed air.....	F. Roberts.....	105, 128
Tank for storing oil.....	P. Noyes.....	101, 761
Tanning.....	A. D. Fallmer.....	100, 520
Tanning.....	E. England.....	101, 243
Tanning.....	J. Kidder.....	104, 741
Tanning.....	J. H. Slocum and G. E. Turner.....	106, 085
Tanning.....	C. F. Panknin.....	107, 713
Tanning, Apparatus for.....	J. Campion.....	105, 169
Tanning, Apparatus for.....	J. and S. F. Robinson and C. C. Putnam.....	106, 209
Tanning by infiltration.....	L. F. Robinson.....	101, 661
Tanning by infiltration, Apparatus for.....	J. G. Baker.....	101, 812
Tanning composition.....	W. B. Brittingham.....	109, 714
Tanning, Composition for.....	G. W. Crabtree and J. G. Stoakes.....	104, 276
Tanning, dyeing, &c., Material for.....	F. P. Porcher.....	98, 884
Tanning extracts, Apparatus for obtaining.....	S. H. Kennedy.....	102, 832
Tanning, Leaches for.....	W. T. H. Wharton.....	110, 317
Tape-line box.....	C. E. Donnellan.....	101, 442
Taper-holder.....	H. B. Adams.....	107, 209
Tap, Expanding.....	F. Murgatroyd.....	107, 946
Tap for liquid packages.....	A. Warth.....	102, 188
Tap for liquid packages.....	A. Warth.....	105, 150
Tap for oil package.....	A. Warth.....	110, 611
Tap for oil package.....	A. Warth.....	110, 612
Tap for rubber-boots.....	F. Flynn.....	103, 594
Tar, acid, from coal, Treating.....	G. Chevrier.....	106, 915
Tassel.....	C. J. McAllister.....	104, 175
Tatting-shuttle.....	B. L. Fetherholf.....	104, 565
Tea and coffee service.....	I. Yeamans.....	104, 010
Tea and coffee strainer.....	A. B. Searles.....	102, 718
Tea-kettle cover.....	W. C. Lovering.....	93, 509
Teapot.....	T. Smith, jr.....	101, 672
Teapot.....	N. Plympton.....	104, 764

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Teapot, Earthen	T. Smith, jr.	108, 061
Teapot-handle	L. C. Clark	104, 829
Teapot or water heater	E. Hunter	107, 054
Teasel-grading machine	G. A. Burroughs	99, 840
Teeth and gums, Compound for cleaning and preserving.	W. M. Tandy	108, 845
Teeth, Artificial	J. H. Wood	102, 193
Teeth, Artificial	J. W. Hollingsworth	103, 189
Teeth, Artificial	J. A. Bidwell	103, 707
Teeth, Carding-machine	W. H. Whiting	107, 842
Teeth, Instrument for plugging	M. L. Battle	99, 050
Teeth on rollers, Method of forming	A. Johnson	99, 683
Telegraph-apparatus	B. Meyer	101, 900
Telegraph-apparatus, Printing	F. L. Pope and T. A. Edison	102, 329
Telegraph, Chemical	G. L. Rutherford	108, 496
Telegraphic apparatus	H. Cook	98, 927
Telegraphic instruments, Apparatus for teaching students the use of.	D. W. Putt	103, 654
Telegraphic relay	B. B. Toye	110, 090
Telegraphic wire-insulator, Cramp-hook for	W. H. Dechant	105, 656
Telegraphing, System of	F. J. Grace	102, 252
Telegraph-instrument, Printing	L. T. Lindsey	102, 561
Telegraph-instrument, Printing	F. L. Pope and T. A. Edison	103, 924
Telegraph-instruments, Printing	W. P. Phelps and W. J. Phillips	103, 496
Telegraph-instruments, Printing	W. P. Phelps and W. J. Phillips	104, 345
Telegraph-insulator	S. McKee	107, 075
Telegraph-pole	E. F. Prentiss	100, 666
Telegraph-pole, Attaching insulator to	J. B. Stearnes	107, 303
Telegraph, Printing	M. F. Adams	99, 047
Telegraph, Printing	S. S. Laws	99, 273
Telegraph, Printing	E. A. Callahan	99, 401
Telegraph, Printing	G. L. Anders	108, 867
Telegraphs, Conductor for	J. Montgomery	103, 072
Telegraphs, fire-alarm, Signal-box for	S. D. Cushman	107, 460
Telegraphs, Insulator for	S. L. Finley	99, 873
Telegraphs, System of fire-alarm and police	S. D. Cushman	105, 552
Telegraph-wires, Insulator for	A. G. Smith and W. Pettingell	109, 461
Telegraph-wires, Insulator for	M. De Montfau	109, 879
Temple, Loom	W. W. Dutcher	106, 038
Temple, Loom	W. W. Dutcher	107, 168
Templets for paneling-machines	N. Jenkins	105, 216
Tenoning-machine	J. T. Curran	105, 432
Tenoning spokes, Machine for	J. W. Huffman	107, 911
Tent and umbrella	J. and G. Ritchie	108, 832
Tent, bath, Suspension	H. N. Taft	101, 678
Terret, Apparatus for finishing	C. Hingher	108, 139
Terret-lining	S. Siebold	101, 387
Tether, Animal	T. N. Wheeler	105, 018
Textile and other material, Machine for cutting	A. Warth	106, 101
Thermometer	J. Kendall	104, 466
Thermometer	J. D. Wood	110, 314
Thermometer, Fire-alarm	A. Guest	108, 352
Thermostat, Electrical	G. M. Sternberg	105, 273
Thimble, Sewing	A. H. Law	109, 429
Thimble-skein and box for vehicles	T. Smart, jr.	109, 066
Thorough-brace	J. E. Requa	100, 068
Thrasher and grain-separator, Combined	J. S. Landis	109, 428
Thrasher and separator	A. A. Walker	107, 966
Thrasher and separator, Grain	H. Gill	110, 131
Thrashing-machine	E. A. Goodes	98, 951
Thrashing-machine	E. W. Griffin	99, 310
Thrashing-machine	B. Ayars	99, 519
Thrashing-machine	G. B. Hamlin	99, 888
Thrashing-machine	A. S. Whittmore	100, 478
Thrashing-machine	W. H. Butterworth	101, 578
Thrashing-machine	F. W. Pampel	103, 769
Thrashing-machine	D. C. Baughman	103, 822
Thrashing-machine	J. S. Fulton	103, 866
Thrashing-machine	W. Schnebly	104, 503
Thrashing-machine	G. W. Lee	105, 344
Thrashing-machine	M. Fuos	107, 355
Thrashing-machine	J. Allinas	107, 924
Thrashing-machine	H. Whittier	108, 421
Thrashing-machine	J. Allonas	109, 482
Thrashing-machine and corn-sheller, Combined	J. Bowman	109, 299
Thrashing-machine and separator	A. and P. Staffer	99, 366
Thrashing-machine, Beater for	J. Crowley	103, 147
Thrashing-machine, Feed-attachment for	B. Thompson	107, 203
Thrashing-machines, Clover-hulling attachment to	J. H. Golladay	108, 347
Thrashing-machine separator	I. Lebo	107, 510
Thrashing-machines, Feed-attachment for	D. F. Slane	104, 895

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Thrashing-machines, Grain-measuring attachment to.	B. Baker	104, 536
Thrashing-machines, Separator-attachment to.	M. A. Keller	106, 370
Thread and needle case, Combined.	T. R. Timby	102, 730
Thread guide and holder for bobbin-winding machine.	W. W. Altemus	110, 535
Thread, Implement for cutting.	F. Egge and R. W. Churchill.	107, 016
Thread-spool.	C. V. Pettibone	107, 208
Thread-winding machine.	D. M. Church	108, 758
Thread, yarns, &c., Apparatus for bleaching	J. E. Clarner	109, 177
Threshold.	W. D. St. Clair	100, 461
Thumb-supporter	J. S. Borden	110, 426
Ticket-case, Railroad conductors'	J. T. Smith	100, 940
Ticket-holder	O. E. Pray	101, 037
Ticket-punch	R. Engels	101, 598
Ticket, Railroad	J. P. Whitehead	99, 125
Ticket, Railroad	C. A. Chamberlain	108, 107
Tidal motive-power.	W. R. Close	110, 436
Tidy-pin.	H. H. Newton	103, 915
Tie, Bale.	W. A. Jordan	106, 698
Tie, Bale.	W. A. Jordan	107, 038
Tie-bar for holding bent wood	J. G. Niccum	101, 302
Tie, Cotton-bale.	J. W. Rogan	99, 239
Tie, Cotton-bale.	W. M. Smith	99, 964
Tie, Cotton-bale.	W. Chambers	105, 172
Tie, Cotton-bale.	M. K. Clark	108, 450
Tie, Cotton-bale.	E. P. Jones	108, 600
Tie, Cotton-bale.	J. F. Milligan	109, 748
Tie, Cotton-bale.	W. Chambers	109, 804
Tie, Cotton-bale.	G. N. Beard	110, 539
Tie for bags	G. W. Osborn	107, 952
Tie for hollow walls	E. Tutte	99, 035
Tile-cutting machine.	O. F. Monfort	106, 390
Tile-machine.	J. W. Penfield.	98, 519
Tile-machine.	J. B. Hughes	106, 062
Tile-machine.	J. Christen	106, 550
Tile, Roofing.	G. Shove	101, 775
Tiles for roofing, &c.	W. Utley	108, 068
Tiles, Machine for dressing.	G. and V. G. Barney	107, 435
Tiles, pipes, &c., Kiln for burning.	J. Hornsby	107, 496
Tiller, Steam.	R. Creuzbaur	109, 183
Tilling or cultivating, Machine for.	H. Belmont	110, 109
Tilts for barrels, Self-acting.	I. Hudson and W. Minshall	107, 779
Timber and wood, Composition for preserving	E. J. De Smedt	100, 608
Timber, Chute for delivering.	J. W. Haines	107, 611
Timber, Wagon for loading.	J. Skeen	109, 956
Time-lock.	L. A. Haines	106, 691
Time-pieces, Equalizing the main-spring of.	J. P. Adams	106, 304
Time-register for hiring purposes.	A. Courvoisier	98, 669
Time-signaling apparatus for railroad.	J. G. Johnson	108, 792
Time-table, Adjustable.	L. J. Smith	107, 970
Time-table indicator.	L. Wright	108, 548
Tinman's machine.	C. Brombacher	101, 577
Tinners and sheet-iron workers' roll.	A. W. P. A. and F. A. Whitney	101, 068
Tinners' fire-pot.	F. M. Campbell and L. W. Brown	109, 383
Tip for legs of chairs, Elastic	S. Van Patten	102, 627
Tire for traction-engines.	O. Hyde	109, 907
Tire-machine	S. Roe, jr.	108, 634
Tire, Machine for shrinking	W. Werts.	99, 268
Tire on wheels, Mode of setting.	A. O. Wheeler	109, 982
Tires, carriage, Device for tightening	J. B. West	101, 330
Tire setting and cooling apparatus.	C. B. Guy	100, 023
Tire-setting machine.	A. Shoyren and H. A. Adams.	103, 669
Tire-setting machine.	J. H. Williams	108, 544
Tire-shrinker.	C. S. Sherk	109, 147
Tires, Machine for rolling.	H. U. P. R. de Gier	107, 194
Tires, Machine for upsetting.	W. Bowden	106, 775
Tire tightener, Wagon.	A. B. Hurd	102, 008
Tire-upsetting machine.	T. Sullivan	102, 448
Tire-upsetting machine.	P. J. Ayres	100, 448
Tobacco-bag	G. W. Johnson	101, 883
Tobacco, Bleaching	H. Mearns	108, 808
Tobacco box or drum	J. Potter	106, 504
Tobacco, Case for curing and transporting.	G. E. Tuckett.	100, 087
Tobacco-casing machine	E. Holbrook, jr.	108, 355
Tobacco leaves, Machine for booking.	J. Wise	109, 092
Tobacco leaves, Machine for spreading.	M. M. Kluck.	99, 687
Tobacco, Machine for granulating	C. H. Lilienthal.	102, 560
Tobacco, Machine for packing	J. H. Trowbridge	99, 372
Tobacco, Machine for pressing and sheeting	G. W. and T. W. Rucker and O. C. Swan	105, 981
Tobacco, Mode of treating	S. G. Rice	106, 207
Tobacco, Packing-case for	S. F. Hess	99, 188

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Tobacco-paper, Manufacture of.....	R. Antigüedad.....	105, 160
Tobacco-pipe.....	Z. R. Bennett.....	101, 417
Tobacco-pipe.....	W. Selfe.....	110, 594
Tobacco-pipe machine.....	J. H. Hollely.....	104, 850
Tobacco-pipes, stems, and cigar-holders, Composition for the manufacture of.....	J. R. Cole.....	101, 101
Tobacco, plug, Process for manufacturing.....	L. W. Spencer.....	106, 882
Tobacco-plugs, Process for manufacturing.....	R. D. Hay.....	107, 368
Tobacco-ridger.....	O. W. Goslee.....	106, 810
Tobacco-rolling machine.....	J. W. Stone.....	103, 255
Toilet-box.....	S. W. H. Ward.....	103, 858
Toilet-mirror.....	G. H. Chinnoek.....	100, 980
Toilet-mirror.....	W. H. King.....	101, 022
Toilet-mirror.....	G. H. Chinnoek and E. P. Williams.....	103, 980
Toilet-mirror and other frames.....	E. P. Williams and G. H. Chinnoek.....	103, 809
Toilet-mirror frame, Hand.....	E. P. Williams and G. H. Chinnoek.....	103, 837
Toilet-mirror frame, Hand.....	E. P. Williams and G. H. Chinnoek.....	103, 808
Tomatoes and other fruits and vegetables, Preparing, to be used as food.....	C. Alden.....	101, 562
Tomatoes, Concentrating the juice of.....	C. T. Provost.....	104, 494
Tongs, Blacksmiths'.....	A. J. Dexter.....	105, 555
Tongs, Fire.....	S. Douglass.....	102, 785
Tongs, Fire.....	J. J. Percival.....	103, 920
Tongs, Fluting.....	H. Gerecke.....	103, 039
Tongs, Fluting.....	S. E. Mersereau.....	103, 224
Tongs for forging the arms on fifth-wheels.....	W. Terrell.....	108, 066
Tongs for lifting and adjusting well-tubing.....	D. Phillips.....	98, 625
Tongs for rigging.....	G. Dohn.....	103, 585
Tongs, Oyster.....	J. W. Sands.....	105, 495
Tongs, Oyster.....	E. Ward.....	107, 740
Tongs, Pipe.....	J. D. Davis.....	98, 747
Tongs, Pipe.....	J. Clark.....	98, 925
Tongs, Pipe.....	A. G. Coes.....	102, 371
Tongs, Pipe.....	S. Lynch.....	102, 690
Tongs, Pipe.....	E. B. Clark.....	104, 426
Tongs, Roofing.....	G. E. Taylor.....	98, 815
Tongs, Tin-workers'.....	J. D. James, jr.....	100, 413
Tongue brace and balance for wagons.....	A. J. Mapes.....	103, 610
Tongue-holder for dentists.....	F. M. Osborn.....	104, 874
Tonguing and grooving, Machine for.....	P. Geiser and L. P. Thompson.....	106, 930
Tool, Boring.....	E. F. Whitney and R. Jones.....	103, 265
Tool, Boring.....	A. G. Hotchkiss.....	104, 958
Tool, Boring.....	W. P. Lathrop.....	108, 367
Tool-chest.....	G. F. Card.....	110, 007
Tool, Combination.....	C. A. Foster.....	102, 115
Tool, Combination.....	G. W. Gregory.....	102, 677
Tool, Combination.....	G. W. Stockwell.....	103, 678
Tool, Combined.....	G. H. Miller.....	108, 377
Tool, Compound.....	A. S. Perham.....	99, 470
Tool, edging, Harness-makers'.....	F. M. Patterson and H. P. Miller.....	105, 242
Tool for checking timber.....	A. W. Dorr.....	99, 863
Tool for cutting stone.....	H. Young.....	99, 514
Tool for cutting stone.....	H. Young.....	108, 425
Tool for cutting wood-moldings.....	C. E. Boynton.....	107, 653
Tool for driving glaziers' points.....	A. Woodworth and E. W. Warren.....	104, 915
Tool for forming the mouths of glass jars.....	G. M. Keefer.....	110, 243
Tool for forming screw-threads on glass jars.....	W. M. Kirchner.....	109, 825
Tool for lacing belts.....	J. M. Stamp.....	100, 686
Tool for making bottles.....	J. Wilson.....	104, 390
Tool for making slides for extension-tables.....	S. J. Moore and G. A. Buckman.....	102, 850
Tool for making splints.....	C. F. Stewart.....	99, 795
Tool for tonguing and grooving.....	E. F. Bengler.....	99, 392
Tool, Grooving.....	J. Dill.....	110, 123
Tool, Grooving.....	C. Van Haayen.....	110, 407
Tool-handle.....	E. L. Abercrombie.....	102, 675
Tool-handle.....	J. B. Davids.....	105, 919
Tool-handle.....	E. Murray.....	109, 033
Tool-holder.....	J. R. Bailey.....	98, 837
Tool-holder.....	J. R. Bailey.....	98, 838
Tool-holder.....	O. Hanks.....	103, 739
Tool-holder.....	R. P. Buttles.....	103, 975
Tool-holder for grindstones.....	P. Leonard.....	100, 047
Tool, Jewelers'.....	D. M. Bissell.....	107, 153
Tool, Multiple.....	H. J. Harris.....	107, 255
Tool, Portable drilling.....	C. Van Haagen.....	110, 405
Tool, Pruning.....	G. W. Anesley.....	103, 005
Tool, Pruning.....	S. Gamwell.....	107, 172
Tool-rest.....	A. Thomas.....	107, 564
Tool-rest for grindstones.....	W. H. Mossteller.....	102, 420
Tools for cutting, grinding and polishing, Manufacture of.....	A. K. Eaton.....	105, 320
Tools for fitting bottoms to fruit-baskets.....	A. S. Parks.....	103, 493

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Tool, Shoemakers'	J. A. Clippinger	99, 163
Tool, Shoemakers'	A. and A. Clarke	103, 566
Tool, Shoemakers'	C. St. Germain	104, 658
Tool, Watchmaking	M. D. Kelly	106, 371
Tooth for grain-drills	C. E. Patric	99, 467
Tooth-pick	W. E. Blake	106, 773
Top for sheet-metal cans	J. Britton	106, 992
Top-plate of cooking-stove	M. Bennet	106, 360
Top, Rainbow-spinning	L. O. Franke	102, 244
Tops of fruit-jars, Securing	W. Galloway	103, 507
Torch-light	F. A. Morley	103, 075
Torpedo and cartridge	E. Gomez	100, 884
Torpedo-boats, &c., Steering-apparatus for	J. A. Ballard	167, 326
Torpedo for oil-wells	J. Dickey	106, 794
Torpedo for oil-wells	H. J. Smith	107, 201
Torpedo, Submarine	W. R. King	102, 556
Toy	C. L. Combs	99, 641
Toy	H. J. Heald	100, 290
Toy	E. L. Taylor	100, 466
Toy	J. C. Fine	106, 262
Toy, Aquatic	A. W. Hart	109, 932
Toy-ball	G. Hartz	109, 204
Toy-blocks, architectural, Mode of connecting	A. B. Swift	101, 179
Toy, Combination	R. Went	99, 987
Toy, Dancing	G. L. and L. P. Wild	109, 698
Toy-gun	E. and A. Buckman	167, 442
Toy-gun	J. Goodale	110, 228
Toy-gun, Ball	C. Robinson	102, 594
Toy-hoop	C. L. Taylor	102, 988
Toy-hoop	P. Hessemer	104, 150
Toy-hoop	R. Ward	110, 519
Toy-locomotive	J. E. Wickham	108, 224
Toy money-box	F. W. Smith, jr.	100, 564
Toy money-box	J. H. Chappell	105, 645
Toy-pistol	C. F. Smith	98, 641
Toy-pistol, Projectile for	C. Robinson	101, 382
Toy-propeller	A. M. Allen	99, 127
Toy-propeller	A. M. Allen	99, 359
Toy, Revolving-bar	H. N. Gallagher	102, 247
Toy rolling-cage	A. M. Allen	101, 076
Toy savings-bank	W. P. X. Smith	98, 643
Toy spring-ball	H. Splittdorf	99, 023
Toy-toad	G. E. Bringman	106, 461
Toy-torpedo	T. J. Johnson	108, 028
Towing canal-boats, Apparatus for	A. H. Emery and G. Leverich	104, 439
Towing-hook for canal-boats	L. R. Shipman	106, 514
Trace-buckle for harness	W. R. Knowles	99, 914
Trace-fastening	O. Palmer	101, 656
Trace-fastening	C. W. Blakeslee	105, 415
Trace-supporting stud	J. Letchworth	105, 700
Tracing-paper, Method of treating	J. Moog	102, 030
Track-cleaner for street-cars	J. A. Morrison	101, 757
Track-laying machine	J. R. Adams	100, 834
Track-lifter	J. M. Batchelor	106, 913
Track-rail for sliding-doors	E. Parker	107, 530
Track, Railway	S. M. Richards	105, 371
Tramway and pavement, Combined	B. C. Smith	110, 597
Transit, aerial, Method of	R. A. Chesebrough	99, 406
Transit-instruments, Stand for	J. and G. H. Bliss	103, 417
Transmitting-power apparatus	R. W. Norwood	108, 173
Transplanting-implement	E. B. Roberts and W. Graham	103, 082
Transportation, Atmospheric	R. H. Gilbert	99, 663
Transposing-scale for teaching music	P. G. Bryan	109, 119
Trap	D. Cole	99, 537
Trap, Animal	H. Sechhausen	99, 245
Trap, Animal	W. J. Clarkson	99, 293
Trap, Animal	W. F. Collier	99, 995
Trap, Animal	H. C. Case	100, 589
Trap, Animal	M. W. Lyman	100, 779
Trap, Animal	E. E. Haughwont	101, 459
Trap, Animal	J. O. Kopas and G. W. Bauer	102, 133
Trap, Animal	J. O. Kopas	102, 134
Trap, Animal	J. H. Lord	102, 411
Trap, Animal	D. J. Owen	103, 767
Trap, Animal	N. F. Hirsh	104, 031
Trap, Animal	W. D. Lindsley	104, 172
Trap, Animal	E. B. Everitt	104, 293
Trap, Animal	S. Arnold	104, 406
Trap, Animal	F. Fox	104, 570
Trap, Animal	C. Anglo	104, 684
Trap, Animal	E. Sprague and G. C. Belt	104, 896
Trap, Animal	S. Arnold	105, 880

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Trap, Animal	W. Ball	106, 107
Trap, Animal	A. Newton	106, 853
Trap, Animal	J. H. Richardson	107, 292
Trap, Animal	L. V. Percival and J. Link	107, 532
Trap, Animal	J. J. Wood	107, 844
Trap, Animal	J. B. Merriman and G. B. Lewis	109, 035
Trap, Animal	J. Cosolowsky	103, 112
Trap, Animal	T. E. Marable	109, 530
Trap, Animal	W. R. Hampton	109, 614
Trap, Animal	E. Oliver	110, 065
Trap, Animal	R. E. Wood	109, 789
Trap, Bird	S. M. Brooks	102, 761
Trap, Fly	M. Little	98, 984
Trap, Fly	M. Patzauer	102, 585
Trap, Fly	M. Merk	105, 963
Trap, Fly	J. Parker	109, 444
Trap for lowering ice	C. Egnor	106, 793
Trap, Insect	P. Funk and J. N. Baader	103, 037
Trap, Mole	W. C. Akers	98, 539
Trap, Mouse	A. A. Hotchkiss	101, 620
Trap, Mouse	A. G. Davis and H. S. Frost	103, 048
Trap, Mouse	W. K. Bachman	107, 647
Trap, Mouse	E. and A. Buchman	108, 104
Trap, Mouse	J. N. Bunnell	108, 876
Trap, Mouse	H. C. Hart	110, 357
Trap, Roach and bug	T. Williams	109, 282
Traps, Locking-device for	J. E. Corning	100, 986
Trap, Steam	W. A. Schneider	98, 524
Trap, Steam	J. Ashworth	100, 249
Trap, Steam	L. H. Plum	102, 037
Trap, Steam	I. B. Coleman	103, 016
Trap, Steam	J. W. Hodges	103, 184
Trap, Steam	E. L. Perkins, J. H. Moulton, and C. E. Sawyer.	106, 201
Trap, Steam	M. C. Gove	109, 004
Trap, Steam	W. H. Bechtel	109, 103
Trap, Stench	D. C. Stillson	110, 087
Traveling-bag, Extension	J. W. D. Patten	101, 910
Traveling-bag fastener	F. Coeller	103, 144
Traveling-belt stop for machinery	T. E. Baden	105, 765
Traversing-machine	V. Foland	105, 930
Tray for gas-purifier	P. Munzinger	108, 167
Trays, Wooden, Machine for the manufacture of	C. H. Dana	102, 920
Treadle	W. S. Coon	101, 104
Treadle	O. H. Needham	101, 152
Treadle	A. M. Allen	110, 533
Treadle, Compound	O. H. Needham	107, 619
Treadle for sewing-machines	C. H. Wilcox	99, 126
Treadle-motion	C. M. Guess	106, 813
Treadle-motion	G. B. Safford	106, 873
Treadle-motion	A. M. Allen	108, 427
Treadle-movement	O. B. Potter	104, 350
Treadle, Universal-joint	A. Nielson	108, 172
Treating tin-scrap to obtain useful products	D. D. Parmelee	102, 148
Treatment of fracture of the lower jaw, Apparatus for	J. Stowe	106, 091
Tree and plant protector	D. R. Prindle	107, 960
Tree-protector	H. Knapp	101, 135
Tree-protector	S. Brunson	104, 418
Tree-protector	A. S. Adams	109, 098
Tree-protector	B. L. Alley and W. T. Shapleigh	109, 859
Tree-protector	C. H. Trumbull	110, 091
Trees, Machine for felling	H. J. Beard	108, 675
Tremolo-attachment for reed or pipe organs	M. J. Kerigan	101, 742
Trestle-tree for vessels	H. Townsend	99, 974
Trimming and shearing hair-cloth, Machine for	O. Arnold and I. Lindsley	106, 106
Trimnings, Plaited	F. A. Kursheedt	105, 095
Trimning, Woven	C. Lambert	101, 026
Trip-hammer	J. C. Butterfield and J. Hay	108, 326
Trip-hammer and anvil	J. C. Higgins	108, 023
Trowel	A. Walker	101, 396
Trowel	F. Reed	104, 644
Trowel, Corner	S. F. Streeter	109, 073
Truck, Car	A. Higley	99, 774
Truck, Car	G. H. Griggs	104, 580
Truck for brick-machines, Off-bearing	W. Olds	109, 339
Truck for moving buildings	J. Barlow	101, 702
Truck, Hand	L. Gilcon	105, 564
Truck, railway, Adjustable	A. V. Sanford	105, 984
Truck, Railway-car	I. Dripps	98, 675
Truck, railway-car, Safety-shoe for	J. S. Crary	106, 258



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Truck, railway-car, Spring for .....	W. M. Taylor .....	109, 358
Truck, railway, Safety .....	C. R. Morris and H. W. Franklin .....	98, 613
Truck, Stone .....	J. and G. Wright .....	105, 024
Truck, Stone .....	W. Evans .....	109, 308
Truck, Street-car .....	J. Berry .....	103, 285
Trumpet for spinning-machines .....	G. Draper .....	110, 021
Trunk .....	T. Bond .....	99, 284
Trunk .....	H. Doerr .....	101, 237
Trunk .....	W. S. Mayo .....	102, 291
Trunk .....	W. S. Mayo .....	102, 292
Trunk .....	F. K. Daggett .....	110, 552
Trunk .....	J. G. Lane .....	110, 575
Trunk, Extension .....	J. Rice .....	108, 187
Trunk-handle cap .....	W. S. Jessup .....	105, 085
Trunk-hasp .....	C. Walsh .....	99, 036
Trunk-stay .....	E. Semple .....	100, 077
Trunnion for steam-engine and calendar .....	T. Hill .....	103, 136
Truss .....	D. and W. Pomeroy .....	99, 703
Truss .....	P. Mueller .....	102, 852
Truss .....	H. Howe .....	103, 047
Truss .....	W. J. Smith .....	103, 516
Truss .....	E. B. Harding .....	104, 952
Truss .....	H. Fuller .....	106, 148
Truss .....	T. M. Fell .....	106, 570
Truss .....	S. W. Baker .....	107, 648
Truss .....	J. Geiss .....	108, 252
Truss .....	J. Goodier .....	108, 253
Truss .....	H. R. Allen .....	108, 428
Truss .....	C. Morrill .....	110, 063
Truss and supporter .....	N. Jones .....	110, 370
Trussing barrels, Machine for .....	P. Welch .....	109, 854
Truss-pads, Manufacture of .....	S. S. Ritter .....	106, 508
Try-square and bevel .....	I. J. Robinson .....	104, 206
Try-square and level .....	H. L. Buckwalter .....	108, 875
Tub and bucket wash, Sheet-iron .....	D. Alcorn and J. Walsh .....	98, 729
Tub, dumping, Hook for .....	J. R. Thorne .....	109, 274
Tub, Dye .....	T. Sampson .....	109, 059
Tube, Atomizing .....	T. J. Holmes .....	106, 587
Tube, Drain .....	J. McMillan .....	106, 709
Tube-drawer for deep wells .....	J. P. Smith .....	109, 462
Tube-drawer for deep wells .....	J. P. Smith .....	109, 463
Tube, Drinking, for invalids .....	E. Chapin .....	103, 299
Tube, Drinking, for invalids .....	E. Chapin .....	103, 300
Tube in grain-drills, Fastening .....	F. Gardner .....	102, 531
Tubes and rods, Device for clamping or cutting off .....	J. W. Mahlon .....	109, 747
Tubes and strips of India-rubber, Machine for making .....	B. M. Hotchkiss .....	105, 335
Tubes, Flexible joint for .....	N. R. Bates .....	98, 833
Tube-skelps, Machine for bending .....	S. P. M. Tasker .....	106, 295
Tubes, Machine for cleaning and polishing .....	H. S. Smith and W. Hughes .....	100, 460
Tubes, metallic, Device for cutting-off .....	S. P. M. Tasker .....	103, 685
Tubes, paper, Machine for making .....	C. Holtz .....	104, 312
Tube-stopper .....	W. Brown .....	100, 115
Tubes to tube-sheets, Uniting .....	B. F. Sturtevant .....	100, 243
Tubes, water, Branch-attachment for .....	J. S. Clark .....	105, 907
Tube-well .....	J. McMillan .....	102, 572
Tubing and filtering arrangement for wells .....	M. C. Monson .....	104, 052
Tubing, Apparatus for making .....	J. Cassidy .....	104, 111
Tubing-machine, Tin .....	J. N. Adams .....	102, 466
Tubing or hose, Flexible .....	T. L. Reed .....	103, 369
Tubing, Metallic .....	C. G. Smith .....	107, 731
Tubing, sheet-metal, Machine for forming .....	M. H. Camp .....	99, 402
Tubular-shaft for clocks .....	G. H. Blakesley .....	101, 815
Tubular-wells, Sand and air chamber for .....	J. E. Robinson .....	103, 239
Tug-boats, Screw-propulsion for .....	E. D. Gird .....	102, 111
Tug-fastening for whiffletrees .....	L. A. Johnson .....	101, 738
Tumblers, Brush for cleaning .....	A. Fischer .....	106, 476
Tumbler-washer .....	A. Hallowell .....	110, 231
Tuning-pin for pianos .....	M. Branig .....	104, 417
Tuning-scale .....	M. L. Bennett .....	105, 029
Tunneling rivers .....	W. Sykes .....	99, 493
Tunnels and dams, Construction of .....	L. Dodge .....	103, 028
Tunnel, Submarine .....	C. Spear .....	101, 174
Turbine .....	H. A. Chadwick .....	98, 665
Turbine .....	H. Boyle .....	98, 913
Turbine .....	J. J. Faulkner .....	99, 548
Turbine .....	E. F. Crocker .....	100, 732
Turbine .....	W. Bayley and A. B. Crowell .....	101, 084
Turbine .....	C. Boyd .....	101, 221
Turbine .....	J. B. Park .....	101, 378
Turbine .....	D. W. Glendinning .....	101, 966
Turbine .....	G. Stover .....	102, 060

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Turbine .....	B. Stetson .....	103, 794
Turbine .....	M. Rapp .....	104, 199
Turbine .....	B. F. Sampson .....	104, 500
Turbine .....	E. Emerson .....	105, 929
Turbine .....	W. V. Martin .....	108, 372
Turbine .....	E. R. Beardsley .....	108, 436
Turbine .....	R. Monroe .....	109, 926
Turning and boring mechanism .....	C. Van Haagen .....	103, 306
Turning-device .....	W. H. McMillan and D. Morris .....	105, 824
Turning or planing the inside of bell or other castings, Machine for .....	O. Jones .....	107, 918
Turn-table .....	C. A. Greenleaf .....	99, 667
Turpentine, Distilling .....	D. Cashwell .....	102, 774
Turpentine, Extracting from pine-trees .....	J. C. Shuler .....	100, 936
Tuyere .....	J. O. Jones .....	98, 976
Tuyere, Adjustable .....	P. Sweeney .....	108, 205
Tuyere .....	A. G. Mann .....	101, 143
Tuyere .....	P. L. Weimer .....	104, 804
Tuyere .....	E. Youngs .....	106, 245
Tuyere .....	J. Rogers .....	107, 725
Tuyere-forgo fire, Double .....	G. Thomas and W. W. McLanahan .....	105, 385
Tuyere of blast-furnace .....	T. W. McCune .....	102, 844
Twine-holder .....	J. M. Keep .....	103, 752
Twine-holder .....	J. S. Smith .....	104, 505
Twine-holder .....	R. L. Webb .....	109, 979
Twine-holder .....	J. Adt .....	110, 326
Twine-holder stand .....	J. S. Smith .....	107, 556
Twine, paper, Machine for making .....	R. V. De Guinon .....	99, 654
Twist, button-hole, Preparing .....	R. Morrison .....	100, 548
Twisting and curling hair, Machine for .....	P. Wisdom .....	101, 800
Tympan-sheets for printing-presses .....	J. Gorman .....	110, 032
Type-cabinet .....	C. Bassett .....	103, 829
Type-casting machine .....	W. Spang .....	110, 303
Type-distributing machine .....	O. L. Brown .....	100, 366
Type-distributing machine .....	D. B. Thompson .....	102, 183
Type-distributing machine .....	C. S. Westcott and A. Rider .....	104, 236
Type, Ornamental scroll .....	H. Stephenson, W. Thompson, and W. G. Blake .....	101, 535
Type-planer .....	W. S. Wright .....	107, 992
Type-setting machine .....	J. T. Slingerland .....	105, 855
Type-setting machine .....	M. de la Pena .....	108, 980
Type-setting machine .....	W. S. Shipley .....	110, 077
Type-writing machine .....	C. A. Washburn .....	109, 161
U.		
Umbrella .....	C. Becker .....	99, 816
Umbrella .....	H. T. Robbins .....	99, 950
Umbrella .....	A. B. Caldwell .....	100, 012
Umbrella .....	E. Adams .....	100, 582
Umbrella .....	S. W. Young .....	102, 746
Umbrella .....	T. B. Penicks and J. Hefly .....	101, 877
Umbrella .....	N. Schner .....	106, 082
Umbrella .....	S. Fox .....	106, 681
Umbrella .....	R. C. Williams .....	103, 077
Umbrella .....	F. Johnson and W. Hatchman .....	108, 151
Umbrella .....	M. Stephens .....	109, 775
Umbrella-connections, Machine for making .....	E. Wight .....	108, 742
Umbrella, Drip-catch for .....	H. Keenan .....	108, 798
Umbrella, folding, Handle of .....	L. Gehlen .....	100, 522
Umbrella-frame .....	H. E. Donor .....	100, 271
Umbrella-frame .....	A. S. Hubbell .....	107, 374
Umbrella-handles, Mode of forming from plastic ma- terials .....	L. Chapman .....	107, 000
Umbrella-holder .....	A. Clark .....	110, 434
Umbrella-rib .....	H. S. Frost .....	103, 861
Umbrellas, Drip-attachment for .....	T. Fowler .....	110, 452
Universal-geared joints .....	G. F. Green .....	98, 864
Universal-jointed treadle .....	A. Nielson .....	108, 172
Untwisting and separating hair-rope, Machine for .....	J. Paradis and W. H. Drew .....	104, 058
Upholstering, Saw for making stuffing for .....	G. W. Marble .....	105, 469
Upholstering-spring .....	H. C. Velie .....	110, 174
Upsetting, punching, and cutting metal, Compound machine for .....	W. Hunt .....	107, 500
Urinal .....	S. Males .....	107, 188
Urinal-attachment to a bed .....	D. Price .....	105, 979
Urinal, Earth .....	J. G. White .....	101, 089
Urinal, Public .....	S. Males .....	102, 416
Urinal, Street .....	M. Bacharach .....	98, 905
Urn, Coffee .....	E. Martin .....	102, 139
Uterine supporter .....	B. F. Stephenson .....	104, 657

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Uterine supporter .....	R. Faulkner .....	109, 401
Utilizing sewerage matter .....	J. B. Hyde .....	110, 366
Utilizing the exhaust-steam of steam-engines, Apparatus for,	H. Gerner .....	104, 573
V.		
Vaccinating instrument, Automatic .....	C. H. Eccleston .....	98, 478
Vacuum in freezing-apparatus, Process of forming .....	E. S. Boynton .....	106, 251
Valve .....	A. Snyder .....	133, 937
Valve .....	H. Belfield .....	105, 027
Valve .....	J. West .....	109, 476
Valve and piston packing .....	J. Marks .....	99, 333
Valve, Balanced slide .....	O. Collier and W. H. Masterman .....	107, 453
Valve, Balanced slide .....	G. F. Morse .....	107, 945
Valve, Balanced slide .....	J. Nesbitt .....	110, 490
Valve, Balance slide .....	I. W. Forbes .....	98, 755
Valve, Balance slide .....	G. R. Moore .....	100, 056
Valve, Balance slide .....	W. Dillon .....	104, 715
Valve, Balance slide .....	T. J. Hamer and M. Walls .....	103, 704
Valve, Balance slide .....	A. K. Rider .....	109, 053
Valve-ball for injecting air .....	J. B. Bennett .....	105, 890
Valve-chamber and seat, Casting .....	J. K. Burke .....	107, 867
Valve, Check .....	D. A. Greene .....	103, 872
Valve, Check .....	L. E. O'Brien .....	105, 591
Valve-cock .....	C. R. Vaillant .....	98, 646
Valve-cock .....	J. Wilson .....	100, 481
Valve-cock .....	J. C. Macdonald .....	107, 697
Valve-cock .....	R. Berryman .....	109, 796
Valve-cock for hydrants .....	S. Pfeleger .....	103, 773
Valve, Exhaust .....	W. A. Carns .....	110, 008
Valve for engines .....	W. C. Selden .....	110, 294
Valve for house-boilers .....	J. C. Rhodes .....	102, 970
Valve for organs, &c., Pneumatic .....	J. R. Mortimore .....	98, 790
Valve for pneumatic draw in organ .....	A. Stein .....	106, 884
Valve for steam and other pumps .....	L. J. Knowles .....	105, 813
Valve for steam-engine, Reversing .....	T. Rodda .....	105, 129
Valve for steam-engines .....	W. C. Selden .....	105, 986
Valve for stop-cocks .....	J. W. Carney .....	106, 121
Valve for water-boilers .....	E. H. Clarkson .....	105, 549
Valve-gear and valve, Cut-off .....	G. E. Noyes .....	105, 119
Valve-gear, Cut-off .....	A. W. Almquist and F. W. Ofeldt .....	99, 518
Valve-gear, Cut-off .....	C. W. Wailey .....	98, 724
Valve-gear, Cut-off .....	G. W. Fisher and H. Reid .....	110, 223
Valve-gear for locomotives .....	A. Onslow .....	103, 647
Valve-gear for steam-engine .....	T. Hill .....	103, 137
Valve-gear for steam-engines .....	W. B. Doddridge .....	103, 982
Valve-gear for steam-pump .....	J. C. King .....	107, 504
Valve-gear of steam-engine .....	D. G. Starkey .....	104, 224
Valve-gear, Steam-engine .....	I. W. Forbes .....	98, 754
Valve-gear, Variable .....	G. M. Bird .....	99, 052
Valve-gear, Variable cut-off .....	W. Harsen .....	100, 619
Valve-gear, Variable cut-off .....	G. E. Long .....	103, 904
Valve, Globe .....	G. W. Reisinger .....	98, 631
Valve, Globe .....	E. J. Gould .....	98, 688
Valve, Globe .....	J. W. Baldwin .....	99, 812
Valve, Globe .....	I. W. Brown .....	102, 035
Valve, Globe .....	N. King .....	104, 037
Valve, Governor .....	W. Smith .....	102, 174
Valve in steam-apparatus in dressing stone .....	L. Pochet .....	107, 406
Valve, Laterally-sliding throttle .....	W. Glass .....	109, 001
Valve, Lock-up safety .....	W. Moses .....	98, 991
Valve-mechanism for oscillating-engine .....	H. Bromell .....	103, 840
Valve of rotary-engine .....	W. Fitzgerald .....	99, 423
Valve, Operating .....	A. L. Pennock .....	106, 867
Valve or cut-off for liquid cans, Self-acting .....	H. S. Snow .....	110, 166
Valve, Pump .....	J. W. Douglas .....	102, 664
Valve, Pump .....	N. T. Coffin .....	105, 913
Valve, Pump .....	G. M. Wernmann .....	106, 974
Valve, Pump .....	J. T. Whipple .....	107, 841
Valve, Pump .....	D. W. Clark .....	108, 237
Valve, Railroad-tank .....	M. Cowing .....	101, 827
Valve, relief, Automatic .....	A. M. Black .....	101, 814
Valve, Rotary-steam .....	G. Leckenby .....	104, 746
Valve, Safety .....	T. S. La France .....	98, 697
Valve, Safety .....	G. W. Cushing .....	99, 762
Valve, Safety .....	H. J. Paine .....	102, 147
Valve, Safety .....	J. D. Lynde .....	103, 062
Valve, Safety .....	N. Thomas .....	107, 308
Valve, Safety .....	W. R. Reece .....	107, 540
Valve, Safety .....	H. A. Goll .....	108, 345

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Valve, Safety .....	A. C. Ancona .....	109, 483
Valve, Safety .....	J. Armstrong .....	109, 996
Valve, Safety .....	H. F. Snyder .....	110, 082
Valve, Safety, for dental vulcanizers .....	F. R. Moorhead .....	105, 115
Valve, Safety, Spring-balance stop for .....	B. Hathaway .....	103, 178
Valves and dampers, Electro-magnetic apparatus for regulating .....	G. M. Sternberg .....	105, 272
Valves, conical, Machine for refitting .....	C. F. Hall .....	100, 617
Valve, self-acting, Equalizing .....	J. J. Steiger .....	102, 176
Valve, Semi-rotary .....	J. F. Holloway .....	110, 041
Valves in steam-engines, Operating .....	G. I. Washburn .....	98, 725
Valve, Slide .....	A. Hemmingway .....	100, 625
Valve, Slide .....	J. Larkin .....	102, 410
Valve, Slide .....	G. Bailey .....	107, 863
Valve, Slide .....	J. Smart .....	110, 300
Valve, slide, Balance .....	J. Fitzgerald .....	100, 612
Valve-slide for steam-engines .....	F. Curtis .....	106, 669
Valves of fluid-meters, Device for actuating the .....	D. B. Spooner .....	107, 830
Valves, Steam-engine slide .....	A. J. Stevens .....	100, 814
Valve, steam, Oscillating .....	I. W. Forbes .....	98, 753
Valve, Stop .....	J. A. Marden .....	98, 510
Valve, Stop .....	L. D. Gilman .....	101, 002
Valve, Stop .....	J. Flower .....	104, 568
Valve, Stop .....	R. Safely .....	108, 522
Valve, Stop .....	H. G. Ludlow and J. Stono .....	108, 714
Valve, Stop .....	C. E. Hutson .....	109, 906
Valve, Stop .....	R. Pilling .....	110, 391
Valve, Water-closet .....	H. Strater, jr .....	98, 814
Valve, Water-closet .....	C. T. Forrest .....	101, 359
Valve, Water-closet .....	H. H. Craigie .....	103, 721
Vapor-bath apparatus .....	U. L. Lecte .....	106, 944
Vapor-burner for cooking or heating .....	H. S. Saroni .....	100, 807
Vapors, medicated, Apparatus for administering .....	J. C. Cook .....	99, 408
Varnish .....	R. A. Beattie .....	109, 485
Varnish and paints, Compound for the manufacture of .....	J. Naftel .....	103, 074
Varnish, &c., Composition for .....	H. Browning .....	102, 911
Varnish for photographic negatives .....	J. W. Morgencier .....	109, 833
Varnish for surfacing railway-heads, drawing and spinning frames .....	A. Marr .....	103, 214
Varnish for tin-ware .....	J. Bowker .....	103, 291
Varnishing and labeling fruit-cans and other cylindrical packages, Machine for .....	A. C. Platt .....	106, 724
Varnish, Manufacture of .....	J. B. Pollock .....	109, 245
Varnish, Transparent .....	J. Restle .....	108, 829
Vat, Cheese .....	H. W. Millar .....	109, 140
Vat, Dye .....	T. E. Rogers .....	100, 670
Vat, Tanning .....	J. E. and C. L. Smith .....	108, 000
Vault-lights, Mode of inserting glass in .....	Z. Cobb .....	107, 663
Vegetable and fruit peeler .....	E. D. Ayerell and J. Malan .....	100, 583
Vegetable-roaster .....	C. G. Baylor .....	101, 085
Vegetables, fruits, &c., Preserving .....	D. M. Medford .....	101, 373
Vegetables, Machine for cutting .....	W. R. Dunn .....	102, 666
Vegetables, Treating, to obtain fiber for paper .....	J. A. Roth .....	98, 712
Vegetable-washer .....	H. J. Wattles .....	101, 685
Vegetable-washer .....	R. Derham .....	101, 123
Vehicle .....	E. Rowe .....	101, 663
Vehicle .....	T. H. C. Mey .....	109, 644
Vehicle .....	J. Jack .....	110, 141
Vehicle .....	C. Daniel .....	110, 209
Vehicle .....	J. D. Ross and M. K. Burko .....	110, 396
Vehicles, Apparatus for detaching poles and shafts from .....	L. O. Kunze .....	109, 521
Vehicles, Axle for .....	A. J. Straight .....	106, 969
Vehicles, Bolster and bed-plate for .....	J. Henry .....	101, 013
Vehicles, Fare-box for .....	J. B. Slawson .....	105, 005
Vehicle, Shaft-coupling for .....	J. Steele .....	108, 662
Vehicles, Holdback for .....	W. H. Groesbeck .....	102, 935
Vehicles, Passenger-register for .....	J. Rhoads .....	105, 980
Vehicles, Seat for .....	D. R. Allen .....	109, 368
Vehicles, Spring for .....	B. Crandall, jr .....	104, 277
Vehicles, Spring for .....	H. E. Wolcott .....	108, 735
Vehicles, Spring for .....	E. Wright .....	109, 095
Vehicles, Spring-seat for .....	G. W. Diller .....	106, 338
Vehicles, Spring-seat for .....	W. Mead, F. D. May, and R. L. Hoyt .....	110, 150
Vehicles, Thimble skein and box for .....	T. Smart, jr .....	109, 066
Vehicles, Wheel for .....	C. V. Pettibone .....	109, 417
Vehicles, Wheel for .....	T. J. Smith .....	109, 465
Velocipede .....	J. H. Haynes .....	98, 592
Velocipede .....	A. Wanner .....	98, 819
Velocipede .....	R. E. Lowe .....	99, 096
Velocipede .....	J. A. Crandall .....	99, 166

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Velocipede.....	G. D. Emerson .....	99, 546
Velocipede.....	G. L. Haussknecht.....	99, 567
Velocipede.....	J. Beck .....	100, 356
Velocipede.....	F. L. Purroy.....	101, 310
Velocipede.....	F. J. Forsyth.....	101, 993
Velocipede.....	W. Quinn .....	102, 321
Velocipede.....	J. H. Rhodes and W. Reed .....	102, 322
Velocipede.....	S. Nislosduff .....	102, 423
Velocipede.....	A. M. Allen .....	103, 937
Velocipede.....	E. Tarbox .....	103, 729
Velocipede.....	C. Wyndham .....	103, 529
Velocipede.....	J. C. Clime .....	103, 780
Velocipede.....	J. Eggert .....	107, 888
Velocipede.....	D. Hanchett, J. C. Daney, and R. Stuart .....	103, 408
Velocipede.....	H. A. Maltby .....	110, 057
Velocipede, Dumb-horse.....	S. D. Roberts and M. Dingee .....	105, 251
Velocipede, Floating .....	O. A. Davis .....	99, 540
Velocipede, Floating .....	C. O. Wederkinch and A. Starkweather .....	109, 083
Velocipede, Ice .....	M. Coffin .....	107, 226
Velocipede-sleigh .....	D. M. Anderson .....	93, 657
Velocipede, Steering-mechanism for .....	A. Christian .....	103, 967
Veneer to wood, Securing .....	W. H. Knight .....	104, 858
Ventilating, cooling, or warming beds, Device for .....	D. E. Somes .....	99, 722
Ventilating millstone .....	C. Cerisier .....	93, 555
Ventilating millstones .....	A. Grube .....	93, 564
Ventilator .....	R. A. Goodyear .....	99, 429
Ventilator .....	E. Mortimer .....	100, 267
Ventilator .....	W. E. Phelps .....	100, 797
Ventilator .....	O. Barr .....	101, 972
Ventilator .....	H. S. Janes .....	103, 215
Ventilator .....	E. J. Durant .....	108, 464
Ventilator .....	W. F. Ross .....	109, 056
Ventilator, alarm, and bilge-pump for vessels.....	W. E. J. Thiers .....	109, 779
Ventilator and refrigerator, Car.....	W. E. Phelps .....	107, 716
Ventilator, Automatic .....	B. F. Prentis .....	108, 185
Ventilator for hats.....	W. F. Warburton .....	109, 473
Ventilator for mines .....	J. B. Jones .....	102, 631
Ventilator for stove-pipes .....	C. D. Woodruff .....	106, 523
Ventilator for windows.....	S. C. Maine .....	103, 429
Ventilator for windows.....	W. C. Betts .....	102, 478
Ventilator or cowl .....	J. Edson .....	103, 856
Ventilator, Railroad-car.....	M. T. Hitchcock .....	93, 865
Ventilator, Railroad-car.....	I. Bonnell .....	100, 589
Ventilator, Railroad-car.....	S. Darling .....	100, 870
Ventilator, Railroad-car.....	H. A. Curtis .....	103, 722
Ventilator, Railroad-car.....	W. Conrad .....	105, 046
Ventilator, Railroad-car.....	W. H. Hunt .....	106, 940
Ventilator, Railroad-car.....	G. B. Armstrong and G. F. McLellan .....	110, 416
Ventilator, Stove-pipe .....	D. V. Thrift .....	103, 943
Vent-spout, Oil-can .....	J. J. Marcy .....	93, 986
Vessel, Cooking .....	M. B. V. Johnson .....	103, 468
Vessel, Culinary .....	C. Landrine .....	100, 045
Vessel, Culinary .....	C. E. Cerbett .....	100, 863
Vessel, Culinary .....	C. Estabrooks .....	101, 244
Vessel, Culinary .....	J. C. Smith .....	102, 608
Vessel, Culinary .....	C. W. Hermance .....	103, 180
Vessel, Culinary .....	E. Clark .....	105, 779
Vessel, Culinary .....	R. M. Hermance .....	110, 039
Vessel, Earth-chamber .....	W. H. Bliss .....	102, 460
Vessel, fore-and-aft, Square-sail for .....	A. A. Holling .....	108, 706
Vessel for packing butter and other articles.....	W. Pratt .....	104, 198
Vessel, Refrigerating .....	L. Klee and A. Patterson .....	103, 473
Vessels, Apparatus for raising .....	J. E. Gowen .....	110, 564
Vessels, Hand-indicator for showing the course of .....	H. P. Tuttle .....	100, 821
Vessels, Hull of .....	D. De Haven .....	105, 437
Vessels, Hull of .....	L. P. Rider .....	107, 961
Vessels, Jib-hank for .....	H. K. Eldridge .....	100, 019
Vessels, Propelling .....	J. Ghisi .....	103, 040
Vessels, Propelling .....	S. D. Tillman .....	104, 512
Vessels, Propelling .....	J. L. Arman .....	108, 230
Vessels, Side-light for .....	W. Darley .....	107, 165
Viaduct .....	C. Bender .....	108, 317
Viaducts, Tubular submarine .....	W. G. Mann .....	103, 350
Vial for filtering collodion .....	D. H. Cross .....	104, 432
Vino cutter and trimmer .....	H. W. White .....	106, 437
Vinegar and acidifying liquids, Manufacture of .....	R. D. Turner .....	105, 390
Vinegar, Apparatus for the manufacture of .....	T. Grundmann .....	110, 229
Vinegar, Manufacture of .....	P. Plodeck .....	108, 291
Vine-puller for potato-diggers .....	L. Berry .....	107, 328
Vines, plants, &c., Compound for destroying the oidium in .....	C. P. Folliet .....	107, 027
Violin .....	J. Grandjon .....	100, 284

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Violin .....	T. P. Knox .....	104, 324
Violin .....	M. W. White .....	109, 696
Violin-holder .....	I. H. Arey .....	104, 4, 5
Vise .....	R. J. Cushing .....	100, 863
Vise .....	E. Crawley and T. L. Baylies .....	102, 919
Vise .....	J. Edson .....	104, 437
Vise .....	J. D. Beck .....	104, 541
Vise .....	A. P. Stephens .....	105, 507
Vise .....	G. Mitchell .....	105, 588
Vise .....	J. Chavanne .....	107, 873
Vise .....	A. Dick .....	108, 335
Vise .....	R. S. Hildreth .....	108, 784
Vise .....	J. E. Sinclair .....	108, 840
Vise .....	J. Findlay .....	109, 121
Vise .....	J. and T. Byrd .....	110, 198
Vise and drill, Combined .....	O. Dean .....	109, 594
Vise, Bench .....	G. M. Evans .....	106, 349
Vise, Bevel-jawed .....	A. Z. Mason .....	100, 541
Vise, Carpenters' .....	G. F. Bissell .....	110, 601
Vise-clamp .....	B. F. Bergh .....	99, 636
Vise for holding saws .....	H. S. Ross .....	98, 803
Vise, gas-pipe, Portable .....	T. Marshall .....	106, 380
Vise, Spring, for gun-locks .....	J. Stokes and T. Bennett .....	101, 937
Vise, Watchmakers' .....	A. M. Bush .....	108, 877
Vulcanite or hard rubber, Coloring .....	A. D. Schlesinger .....	99, 956
Vulcanized India-rubber or combination hose, Protecting the ends of .....	J. Schenck .....	99, 485
Vulcanizers, &c., Apparatus for automatically regulating the flow of gas used in heating .....	J. M. Osgood .....	105, 971
W.		
Wagon .....	J. S. Wilson .....	99, 043
Wagon .....	E. Petteys .....	100, 187
Wagon .....	J. H. Barr .....	100, 251
Wagon .....	J. W. West .....	108, 419
Wagon .....	E. Ball, jr. .....	110, 107
Wagon-axles, Attachment of cultivator-frames to .....	D. Fuller .....	108, 996
Wagon-bed .....	W. B. Porter .....	107, 536
Wagon-bed, Strap-bolt for .....	W. J. Lewis and H. W. Oliver .....	108, 493
Wagon-boxes, Metallic standard for .....	E. Milner .....	105, 714
Wagon-brake, Self-acting .....	A. Zink .....	109, 097
Wagon, Device for unloading .....	I. Williams .....	109, 088
Wagon, Dumping .....	E. Miller .....	100, 052
Wagon, Dumping .....	V. H. Lyon .....	101, 030
Wagon, Dumping .....	C. F. Parker .....	102, 426
Wagon, Dumping .....	G. Burket and S. Lantz .....	103, 426
Wagon, Dumping .....	B. Holmes .....	105, 684
Wagon for loading timber .....	J. Skeen .....	109, 956
Wagon, Gearing for .....	J. B. Auger .....	108, 085
Wagon, grain, End-gate for .....	C. H. Comstock .....	101, 102
Wagon, Hay-binder pole for .....	D. Potter .....	104, 349
Wagon, Hay-rack for .....	J. W. Stevens and J. P. Bacome .....	104, 373
Wagon, Hay-rack for .....	S. J. Smith .....	109, 261
Wagon-iron .....	H. C. Kochensperger .....	109, 425
Wagon, Milk .....	B. R. Judge .....	108, 780
Wagons, Bolster for .....	J. W. Pearman and J. F. C. Lutz .....	109, 243
Wagons, Brake-block for .....	W. H. Bradt .....	101, 818
Wagon-seat .....	D. H. Richardson .....	100, 190
Wagon-seat attachment .....	W. Beers .....	103, 129
Wagon-seat fastening .....	F. Norris .....	105, 832
Wagon-seat fastening .....	J. C. Rankin .....	109, 943
Wagons, End-gate for .....	R. E. Stocking and C. P. Greene .....	109, 966
Wagons, grain, Fastening side-boards to .....	G. Seitzinger .....	99, 010
Wagons, Hammer-strap for .....	C. Brown .....	103, 421
Wagons, Hay shelf or rack for .....	J. A. Hughes .....	104, 313
Wagon, Spring for .....	A. W. McKown .....	109, 033
Wagons, Spring-seat for .....	W. Pruett .....	100, 444
Wagons, Spring-seat for .....	H. E. Foster .....	102, 673
Wagon-standard .....	J. Henry .....	101, 014
Wagon, Steam .....	E. P. Talcott .....	100, 086
Wagon-step .....	M. C. Floyd .....	101, 569
Wagons, Tongue brace and balance for .....	A. J. Mapes .....	108, 610
Wagon-tongue .....	E. P. Carter .....	101, 429
Wagon-tongue support .....	J. Albright and J. Y. Bloomington .....	99, 388
Wagon-tongue support .....	D. D. Robinson .....	107, 546
Wagon-tongue support .....	A. F. Gue .....	109, 817
Wagon, Weighing .....	G. A. Wilcox .....	110, 100
Walks, flooring, &c., Concrete composition for .....	R. S. Lewis .....	109, 524
Walking-beam and sucker-rod connections for deep wells .....	M. A. Morse .....	101, 493



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Walking-beams, Adjustable-connection of sucker-rod to.	A. Good, jr.	103, 447
Wall and floor for buildings.	J. J. Schillinger	104, 360
Wall-paper protector.	M. Disston.	103, 432
Wall-paper, show-cards, &c., Machine for flocking.	H. W. Bulkley.	105, 774
Wall-protector.	B. K. Maltby	108, 497
Walls for buildings.	J. Weathers	106, 749
Wardrobe, bedstead, and bureau.	J. R. Davis and F. Rominger.	107, 013
Warping-machine.	S. Campbell and D. McFarlane.	99, 843
Warping-machine.	R. C. Reynolds and C. I. Barker.	100, 070
Warping-machine.	C. Mather and W. Rossetter.	104, 329
Warping-machine.	L. Abbot.	104, 920
Warping-machine.	J. and T. Walmsley.	108, 856
Warping-machine.	J. Turner.	110, 225
Warping-machines, Drop-wire supporting bar or plate of.	I. C. Downes and H. Donk.	101, 110
Wash-board.	J. H. Hubbell.	99, 676
Wash-board.	S. Hubbell, jr.	102, 545
Wash-board.	A. Chihfield.	103, 456
Wash-board, Double.	H. F. Hilderbrand.	99, 190
Wash-boiler attachment.	A. H. Proctor.	103, 503
Washer and boiler.	J. Slater.	106, 414
Washer and wringer.	D. A. T. Gale.	99, 552
Washer-cutter.	P. McCormick.	107, 700
Washer for screw-bolts.	N. Thompson.	100, 214
Washer, Nut-locking.	R. Rutter.	103, 780
Wash for the cure of scab in sheep, &c.	H. Smith.	108, 199
Washing and drying machine.	W. P. Uhlinger.	103, 528
Washing and wringing machine.	J. B. Wakeman and A. R. Field.	102, 628
Washing-apparatus.	J. T. Grose.	98, 585
Washing-machine.	J. Scott.	98, 525
Washing-machine.	G. E. Chamberlin.	98, 556
Washing-machine.	L. B. Hartt.	98, 591
Washing-machine.	J. Habermehl.	98, 763
Washing-machine.	O. H. Weed.	98, 823
Washing-machine.	A. J. Wilcox.	98, 830
Washing-machine.	M. V. Bulla and J. B. Birdsell.	98, 845
Washing-machine.	S. Ainsworth.	98, 902
Washing-machine.	H. L. Ennes.	98, 939
Washing-machine.	T. R. Evans.	98, 941
Washing-machine.	G. W. Stranahan.	99, 029
Washing-machine.	S. W. Clark.	99, 060
Washing-machine.	T. Rees.	99, 235
Washing-machine.	L. Wharton.	99, 383
Washing-machine.	P. Lockie.	99, 450
Washing-machine.	B. F. Fellman.	99, 549
Washing-machine.	F. L. Bailey.	99, 747
Washing-machine.	O. S. Burges, sr.	99, 836
Washing-machine.	N. W. Calhoun.	99, 842
Washing-machine.	J. V. Wackerman.	99, 984
Washing-machine.	B. Pine.	100, 062
Washing-machine.	W. A. Brown.	100, 253
Washing-machine.	F. M. English.	100, 513
Washing-machine.	E. B. Scattergood.	100, 808
Washing-machine.	G. W. Putnam.	100, 923
Washing-machine.	J. T. Dorton and S. G. Eubank.	100, 991
Washing-machine.	W. F. Goodwin.	101, 005
Washing-machine.	A. Belcher.	101, 087
Washing-machine.	H. W. Connor.	101, 103
Washing-machine.	J. D. Van Dusen.	101, 190
Washing-machine.	G. R. Chandler.	101, 226
Washing-machine.	M. Ingalls.	101, 269
Washing-machine.	J. O. Kopas.	101, 277
Washing-machine.	D. F. Neikirk and J. J. Koch.	101, 301
Washing-machine.	A. M. Smith.	101, 321
Washing-machine.	C. Williams.	101, 335
Washing-machine.	W. H. Roach.	101, 408
Washing-machine.	J. Balsley.	101, 414
Washing-machine.	J. K. Derby.	101, 441
Washing-machine.	W. Riley.	101, 511
Washing-machine.	C. Dean.	101, 592
Washing-machine.	J. Miller.	101, 643
Washing-machine.	W. H. Cox.	101, 714
Washing-machine.	J. A. Hall.	101, 727
Washing-machine.	J. D. and J. Royse.	101, 768
Washing-machine.	H. E. Smith.	101, 778
Washing-machine.	S. Brackett.	102, 083
Washing-machine.	J. Habermehl.	102, 255
Washing-machine.	C. Hill.	102, 264
Washing-machine.	N. W. Beckwith.	102, 358
Washing-machine.	H. Cook.	102, 373

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Washing-machine.....	E. Fiscus and S. Arney .....	102, 385
Washing-machine.....	B. R. Hand.....	102, 395
Washing-machine.....	W. Badger.....	102, 472
Washing-machine.....	C. Bean and S. Logco .....	102, 477
Washing-machine.....	T. De Witt.....	102, 512
Washing-machine.....	H. N. Thomson .....	102, 621
Washing-machine.....	B. F. Fellman .....	102, 672
Washing-machine.....	S. B. Peugh.....	102, 705
Washing-machine.....	W. T. C. Runnalls .....	102, 714
Washing-machine.....	J. Farmer.....	102, 792
Washing-machine.....	D. Elicker.....	102, 923
Washing-machine.....	J. Robinson.....	102, 972
Washing-machine.....	P. Wilbor.....	103, 112
Washing-machine.....	J. Johnson.....	103, 339
Washing-machine.....	R. S. Morse.....	103, 357
Washing-machine.....	C. P. Winslow.....	103, 405
Washing-machine.....	W. L. Frazee.....	103, 438
Washing-machine.....	J. B. Padon.....	103, 491
Washing-machine.....	J. Sirriue.....	103, 671
Washing-machine.....	I. M. Furbish.....	103, 732
Washing-machine.....	D. Vogt.....	103, 945
Washing-machine.....	F. M. Bacon.....	103, 959
Washing-machine.....	I. Baker.....	104, 096
Washing-machine.....	G. Hamel.....	104, 144
Washing-machine.....	G. W. Cottingham.....	104, 708
Washing-machine.....	S. C. Frink.....	104, 725
Washing-machine.....	I. W. Graffam.....	105, 193
Washing-machine.....	W. Vanscoyoe.....	105, 403
Washing-machine.....	S. Deveau.....	105, 439
Washing-machine.....	M. P. Flanders.....	105, 444
Washing-machine.....	B. Hockabout.....	105, 453
Washing-machine.....	P. B. Shoemaker.....	105, 500
Washing-machine.....	G. L. Witsill.....	105, 616
Washing-machine.....	W. B. Cheeseman.....	105, 646
Washing-machine.....	E. and S. Cool.....	105, 650
Washing-machine.....	H. J. Moreland.....	105, 831
Washing-machine.....	D. B. Pond.....	105, 842
Washing-machine.....	J. A. Moreclock.....	105, 969
Washing-machine.....	D. Broy.....	106, 029
Washing-machine.....	C. H. De Knight.....	106, 137
Washing-machine.....	W. Eaton.....	106, 144
Washing-machine.....	M. A. Shepard.....	106, 229
Washing-machine.....	W. H. Welch.....	106, 290
Washing-machine.....	J. B. Wilson.....	106, 301
Washing-machine.....	J. L. La Rose.....	106, 492
Washing-machine.....	A. Gregg.....	106, 576
Washing-machine.....	R. S. Morse.....	106, 853
Washing-machine.....	J. Prehn.....	106, 870
Washing-machine.....	L. L. Peck.....	106, 957
Washing-machine.....	C. S. Banker and A. Purdy.....	107, 151
Washing-machine.....	P. Johnson.....	107, 267
Washing-machine.....	A. L. D. Moore.....	107, 283
Washing-machine.....	R. Lighthall.....	107, 390
Washing-machine.....	J. B. Woolsey.....	107, 431
Washing-machine.....	E. L. Bullock.....	107, 443
Washing-machine.....	C. Ford and F. C. Garbutt.....	107, 470
Washing-machine.....	P. Hayden.....	107, 488
Washing-machine.....	A. L. Van Norman.....	107, 569
Washing-machine.....	J. A. Fletcher.....	107, 604
Washing-machine.....	J. T. Bever.....	107, 652
Washing-machine.....	E. S. Harper.....	107, 681
Washing-machine.....	A. Mutersbaugh.....	107, 707
Washing-machine.....	G. Lieb.....	107, 793
Washing-machine.....	C. M. Powers and T. L. Robinson.....	107, 959
Washing-machine.....	G. Wright.....	107, 991
Washing-machine.....	L. Hale.....	108, 019
Washing-machine.....	A. Riggs.....	108, 051
Washing-machine.....	F. Feazel.....	108, 125
Washing-machine.....	G. R. Nebinger.....	108, 168
Washing-machine.....	B. Illingworth.....	108, 266
Washing-machine.....	C. W. Reeder.....	108, 393
Washing-machine.....	S. M. Smith.....	108, 646
Washing-machine.....	E. Davis.....	108, 689
Washing-machine.....	A. M. Paullin.....	108, 934
Washing-machine.....	H. E. Smith and G. F. Speer.....	109, 259
Washing-machine.....	T. Snow.....	109, 262
Washing-machine.....	H. Warner.....	109, 279
Washing-machine.....	W. B. H. Beach.....	109, 287
Washing-machine.....	D. W. C. Cooley.....	109, 387
Washing-machine.....	J. H. Dustan.....	109, 501
Washing-machine.....	G. W. Hungerford.....	109, 517

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Washing-machine.....	L. H. Whitney.....	109, 697
Washing machine.....	B. C. Bailey.....	109, 710
Washing-machine.....	H. Dickinson.....	109, 810
Washing-machine.....	L. B. Osgood.....	109, 836
Washing-machine.....	J. G. Raymond.....	109, 840
Washing-machine.....	S. S. Middlekauff.....	109, 924
Washing-machine.....	S. Post and H. D. Martin.....	109, 938
Washing-machine.....	D. C. Harlow.....	110, 033
Washing-machine.....	W. J. Dodge.....	110, 555
Washing-machine.....	G. L. Witsil.....	110, 181
Washing-machine.....	A. Hilton.....	110, 235
Washing-machine.....	A. A. Gardner.....	110, 453
Washing-machine.....	B. C. Lawson.....	110, 478
Washing-machine.....	M. S. Marshall.....	110, 482
Washing-machine and boiler.....	J. Russell and T. McGrath.....	102, 046
Washing-machine for waste, &c.....	W. F. Witte.....	107, 430
Washing-machine, Power.....	J. Johnson.....	99, 685
Washing-machine, Wool.....	J. and W. Yewdall.....	107, 846
Wash-stand and tank.....	H. W. Catlin.....	107, 661
Watch.....	C. V. Woerd.....	101, 398
Watch.....	H. Stauffer.....	104, 371
Watch-case.....	C. L. Thiery.....	98, 896
Watch-case.....	C. L. Thiery.....	108, 847
Watch-case.....	A. A. Wood.....	109, 989
Watch-cases, Machine for manufacturing.....	T. B. Dill.....	106, 561
Watches, &c., Escapement for.....	W. Hart.....	106, 815
Watches, &c., Hair-spring of.....	C. Kline.....	109, 826
Watches, Attaching the main-spring of.....	C. D. P. Gibson.....	99, 428
Watches, Compensating-regulator of.....	W. H. Horton.....	103, 190
Watches, Construction of.....	D. G. Currier.....	108, 332
Watches, Device for winding main-springs of.....	M. D. Kelly.....	106, 372
Watches, Machine for finishing the wheels of.....	J. L. Hathaway.....	107, 903
Watches, Main-spring barrel-attachment for.....	O. L. Eliason.....	102, 517
Watches, Main-spring barrel for.....	J. P. Allen.....	100, 245
Watches, Reversible center-pinion for.....	A. Twing.....	106, 432
Watches, Reversible center-pinion for.....	J. V. Mathevit.....	107, 273
Watches, Safety-pinion for.....	C. S. Moseley.....	104, 756
Watches, Safety-stop for.....	S. C. Smith.....	99, 117
Watches, Stem-winding.....	C. E. Jacot.....	101, 881
Watches, Stem winding and setting attachment to.....	F. R. Theurer.....	107, 736
Watch-key, Adjustable.....	J. S. Birch.....	102, 753
Watch, Main-spring barrel of.....	H. B. James.....	107, 916
Watchman's time-check.....	D. Shive.....	102, 165
Watch-regulator.....	D. W. Eldredge.....	100, 120
Watch-regulator.....	J. P. Allen and W. E. Banta.....	109, 246
Watch-regulator.....	J. Elson.....	100, 511
Watch-regulator.....	C. V. Woerd.....	110, 614
Watch, Stem-winding and hand-setting.....	C. L. Kidder and F. A. Jones.....	104, 856
Waste rubber, Manufacture of water-proof fabrics from.....	M. W. Beylikgy.....	100, 005
Water and gas, Pipe and tube for.....	H. M. Stow.....	110, 399
Water and steam apparatus, Pressure-regulator for.....	J. C. Hagan.....	108, 904
Water, Apparatus for forcing.....	J. M. Rucker.....	106, 287
Water, Apparatus for raising.....	J. L. Garlington.....	99, 307
Water-closet.....	J. M. Davis.....	105, 782
Water-closet.....	W. G. Stuart.....	106, 231
Water-closet.....	J. Keane.....	107, 178
Water-closet.....	D. Morrison and J. D. Smith.....	108, 378
Water-closet bowl.....	D. Wellington.....	102, 733
Water-closet box.....	A. R. Murray.....	105, 116
Water-closet hopper.....	A. Ivers.....	108, 146
Water-closet, Portable.....	J. Gilbert.....	98, 950
Water-closet receiver.....	W. Smith.....	106, 089
Water-closet valvular apparatus.....	J. Keane.....	105, 217
Water-cock filter.....	N. C. Wilder.....	102, 636
Water-cooler and refrigerator.....	L. R. Comstock.....	107, 880
Water cut-off for cisterns.....	J. R. Manny.....	107, 936
Water-filter.....	J. W. Dougherty.....	110, 217
Water-filter, liquor-cooler, and refrigerator.....	W. F. Nickels.....	100, 182
Water for the manufacture of ice, Apparatus for purifying.....	T. F. Peterson.....	101, 035
Water-gauge for the tonnage of vessels.....	W. O. Reim.....	98, 630
Water indicator and alarm.....	S. Mirabeau.....	107, 934
Water or other fluids, Apparatus for gauging or regulating the flow of.....	E. A. Chameroy.....	106, 658
Water-pipe machine.....	J. W. Stockwell.....	106, 424
Water-pipe support.....	C. D. Woodruff.....	106, 527
Water-pipes, Adjustable elbow-joint for.....	J. D. Field.....	101, 603
Water-pressure regulator.....	N. C. Lock.....	109, 526
Water-proofing of fabrics with gutta-percha, Apparatus for.....	E. A. Shuette.....	108, 192
Water-ram.....	F. W. Stetson.....	100, 084

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Water-regulator .....	G. W. Darby and A. S. Moon .....	107, 341
Water-supplying apparatus .....	J. C. Hagan .....	104, 019
Water-vessel for steam fire-proof safes .....	G. W. Putnam .....	101, 352
Water-wheel case .....	J. W. Bookwalter .....	100, 362
Water-wheel case .....	J. Raney .....	107, 624
Water-wheel, Current .....	W. Lightfoot .....	101, 282
Wax-flowers, Compound for the manufacture of .....	M. J. McColl .....	100, 540
Wax for artificial flowers, &c., Machine for cutting .....	M. J. McColl .....	99, 928
Wax, Machinery for cutting into sheets .....	W. F. Barnes .....	105, 627
Weaning-bit .....	I. L. Baker .....	104, 408
Weather-beard scribe .....	A. Miller and U. Faris .....	105, 826
Weather-strip .....	J. T. Bliss and J. D. Davenport .....	98, 548
Weather-strip .....	W. Miller .....	99, 932
Weather-strip .....	H. A. Robison .....	100, 074
Weather-strip .....	J. H. Hull .....	102, 547
Weather-strip .....	M. H. Skiff .....	103, 788
Weather-strip .....	W. H. Miller .....	105, 232
Weather-strip .....	W. H. Burghardt .....	105, 420
Weather-strip .....	H. W. Wicker .....	106, 757
Weather-strip .....	C. Hicks .....	108, 480
Weather-strip for doors .....	E. J. Covey and A. Birch .....	103, 302
Weather-strip for doors .....	J. M. Gray .....	104, 448
Weather-strip for doors .....	T. Whitmore and E. Conklin .....	105, 615
Weighing-apparatus, Spring .....	A. Morse .....	103, 818
Weighing-attachment for carding-machine feeder .....	P. C. Evans and H. J. H. King .....	107, 890
Weighing-scales, Registering .....	H. Paddock .....	107, 286
Weighing scales, Spring .....	J. V. Mathevit .....	107, 272
Weights, Apparatus for raising and lowering .....	J. Pickering .....	99, 231
Welding cast or Bessemer steel, Process of .....	J. Absterdam .....	99, 805
Well-auger .....	J. and T. J. Ingels .....	109, 214
Well-borer .....	S. D. Dickerson .....	100, 609
Well-borer .....	T. Sandback and J. W. Fowler .....	101, 925
Well-boring apparatus .....	N. H. Lindley .....	109, 028
Well-drills, Jar for .....	W. W. Eastman and F. B. Marden .....	104, 945
Well-filter .....	J. P. Spaulding .....	105, 009
Well-point .....	C. C. Jones .....	101, 469
Wells, Device for boring .....	O. P. Franz .....	102, 245
Wells, Refrigerating-attachment for .....	J. L. Wiley .....	104, 523
Wells, Snicker-rod drawer for deep .....	J. P. Smith .....	109, 464
Wells, Tube-drawer for deep .....	J. P. Smith .....	109, 462
Wells, Tube-drawer for deep .....	J. P. Smith .....	109, 463
Well, Tube .....	W. R. Hamilton .....	101, 871
Well-tube .....	I. Ayres and D. C. Payne .....	102, 647
Well-tube .....	S. Neff .....	102, 699
Well, Tube .....	S. S. Ayres .....	105, 882
Well-tube .....	A. J. Shirley .....	108, 301
Well-tubing .....	G. W. Hemenway .....	110, 136
Well, Tubular .....	J. Shaw .....	101, 774
Whalebone, Machine for splitting .....	J. A. Sevey .....	105, 498
Wheat for food, Preparation of .....	W. S. Brewster .....	104, 700
Wheat steamer and drier .....	C. T. Hanna .....	107, 680
Wheel, Air-carbureting .....	J. H. Van Honten .....	109, 561
Wheelbarrow .....	H. Alter .....	100, 098
Wheelbarrow .....	N. Cronkito .....	103, 430
Wheelbarrow .....	R. M. Reynolds .....	108, 053
Wheelbarrow .....	J. Ennis .....	108, 341
Wheeled vehicles, Attachment of pole or shaft to .....	J. McMillin .....	102, 695
Wheel, Car .....	J. W. Weston .....	101, 686
Wheel, Car .....	H. W. Moore .....	104, 053
Wheel, Car .....	J. Raddin .....	108, 825
Wheel, Car .....	W. Goodman .....	110, 563
Wheel, car, Cast-iron .....	W. Wilmington .....	106, 243
Wheel, car, Steel .....	J. B. Tarr .....	104, 792
Wheel, Carriage .....	J. G. Buzzell .....	98, 920
Wheel, Carriage .....	R. W. McClelland .....	99, 691
Wheel, Carriage .....	J. R. Baird .....	100, 584
Wheel, Carriage .....	J. W. Guider .....	101, 860
Wheel, Carriage .....	A. H. Leach .....	102, 180
Wheel, Carriage .....	M. Wanser .....	103, 114
Wheel, Carriage .....	S. B. Buck .....	105, 546
Wheel, Carriage .....	J. Ridgo .....	107, 543
Wheel, Carriage .....	T. M. Jones and C. W. Filmore .....	108, 794
Wheel-carriage, Seed-sower .....	J. H. Cole .....	103, 719
Wheel, Chain-water .....	W. M. Starr .....	109, 069
Wheel, Current .....	E. A. White .....	99, 614
Wheel, Double-level master .....	D. E. Mitchell .....	104, 484
Wheel-feed .....	J. B. Merritt .....	105, 476
Wheel for carriages and other vehicles .....	A. F. Cooper .....	99, 851
Wheel for locomotive land-conveyance and coal-hoisting apparatus .....	J. S. French .....	102, 107
Wheel for railway-car .....	J. D. Green .....	101, 259

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Wheel for tinner's beading-machines.....	B. S. Partridge.....	103, 648
Wheel for vehicle.....	I. F. Munson.....	102, 853
Wheel for vehicles.....	F. G. Wallace.....	101, 948
Wheel for vehicles.....	J. D. Ross.....	104, 208
Wheel for vehicles.....	C. V. Pettibone.....	109, 447
Wheel for vehicles.....	T. J. Smith.....	109, 465
Wheel, Gear.....	W. H. Ward.....	103, 328
Wheel, gear, Adjustable.....	W. H. Ward.....	108, 539
Wheel, gear, Stop-motion.....	J. H. Whitney.....	109, 164
Wheel, Locomotive.....	J. B. Tarr.....	98, 895
Wheel, Locomotive.....	J. R. Richardson.....	105, 598
Wheel, Paddle.....	A. Wingard.....	99, 510
Wheel, Paddle.....	D. Anderson.....	99, 807
Wheel, Paddle.....	B. W. Tucker.....	100, 820
Wheel, Paddle.....	L. W. Wright.....	104, 528
Wheel, Paddle.....	W. F. Knowlton.....	104, 603
Wheel, Paddle.....	W. H. Holland.....	105, 943
Wheel, Paddle.....	R. H. Connelly.....	106, 331
Wheel, Paddle.....	J. Rees.....	106, 620
Wheel, Paddle.....	D. De Haven.....	107, 014
Wheel, Paddle.....	M. A. Crooker.....	107, 340
Wheel, Paddle.....	J. W. Post.....	108, 626
Wheel, Paddle.....	S. Bateman.....	109, 286
Wheel, Propelling.....	A. C. Loud.....	102, 747
Wheel, Railway-car.....	A. Komp.....	99, 210
Wheel, Railway-car.....	J. N. Farrar.....	99, 547
Wheel, Railway-car.....	C. K. Bradford.....	102, 908
Wheel, Railway-car.....	F. H. Trevithick.....	106, 001
Wheel, Railway-car.....	L. B. Hunt.....	109, 320
Wheels, car, Construction of.....	J. K. and N. B. Morange.....	107, 083
Wheels, Carriage and railroad-car.....	A. F. Cooper.....	103, 573
Wheels, carriage, Felly-plate for.....	F. B. Morse.....	103, 273
Wheels, Coal-car and truck.....	J. Patterson.....	100, 795
Wheels, fifth, Machine for bending.....	W. J. Jordan.....	100, 903
Wheels, Machine for putting together and tiring.....	W. F. Waters.....	103, 531
Wheels, Manufacture of.....	E. A. Archibald.....	106, 449
Wheels, Mode of setting tire on.....	A. O. Wheeler.....	109, 982
Wheel, Spinning.....	T. Johnson.....	109, 016
Wheels, Railway-car.....	J. N. Farrar.....	109, 310
Wheel, Steam.....	J. N. Pommert.....	109, 659
Wheels, water, Spiral-current.....	J. Zimmerman.....	99, 272
Wheels, wrought-metal, Manufacture of.....	B. Brunnon.....	109, 380
Wheel-tire, Tightening.....	S. R. Bolton.....	103, 550
Wheel, Water.....	J. D. Bryson and W. R. Dunlap.....	98, 552
Wheel, Water.....	F. O. Clarke.....	98, 561
Wheel, Water.....	E. M. Buckley.....	98, 739
Wheel, Water.....	W. M. Wheeler.....	98, 828
Wheel, Water.....	J. Rogers.....	99, 004
Wheel, Water.....	B. W. Tuttle.....	99, 374
Wheel, Water.....	I. Carter.....	99, 532
Wheel, Water.....	G. A. Houston.....	99, 569
Wheel, Water.....	S. Martin.....	100, 648
Wheel, Water.....	A. F. Murray and H. Green.....	100, 920
Wheel, Water.....	T. H. Powers.....	101, 036
Wheel, Water.....	W. L. Selleck.....	101, 050
Wheel, Water.....	A. N. Wolf and J. Hang.....	101, 199
Wheel, Water.....	J. E. Gillespie.....	101, 255
Wheel, Water.....	P. W. Yarrell.....	101, 402
Wheel, Water.....	J. Buzbo.....	101, 579
Wheel, Water.....	J. L. Frisbie.....	101, 725
Wheel, Water.....	T. Bristol.....	102, 909
Wheel, Water.....	W. H. Hubbard.....	102, 939
Wheel, Water.....	W. T. Duvall.....	103, 162
Wheel, Water.....	J. Krall.....	103, 475
Wheel, Water.....	H. W. Shipley.....	103, 513
Wheel, Water.....	W. W. Richardson.....	103, 657
Wheel, Water.....	E. Dougherty.....	103, 725
Wheel, Water.....	W. Braidwood and H. J. Hewitt.....	103, 972
Wheel, Water.....	W. Haslup.....	104, 026
Wheel, Water.....	A. C. Corpe.....	104, 428
Wheel, Water.....	W. Greenwell.....	104, 579
Wheel, Water.....	J. C. Kelly.....	104, 600
Wheel, Water.....	O. J. Bollinger.....	104, 697
Wheel, Water.....	O. Fuller.....	104, 726
Wheel, Water.....	J. Bastion.....	105, 163
Wheel, Water.....	J. Campbell.....	105, 301
Wheel, Water.....	H. J. White.....	105, 532
Wheel, Water.....	C. D. Wright.....	105, 536
Wheel, Water.....	W. Selleck.....	105, 602
Wheel, Water.....	G. H. Jones.....	105, 694
Wheel, Water.....	A. Kneass.....	105, 698

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Wheel, Water.....	G. Miller.....	105, 712
Wheel, Water.....	V. M. Baker.....	106, 766
Wheel, Water.....	D. Cushman.....	106, 787
Wheel, Water.....	W. S. Place.....	106, 958
Wheel, Water.....	J. R. Richardson.....	106, 962
Wheel, Water.....	J. M. Cook.....	107, 007
Wheel, Water.....	T. H. Risdon.....	107, 627
Wheel, Water.....	D. Lane.....	107, 789
Wheel, Water.....	E. Parker.....	107, 805
Wheel, Water.....	A. P. Teachout.....	108, 209
Wheel, Water.....	D. O. Holman.....	108, 482
Wheel, Water.....	I. W. Snyder.....	108, 529
Wheel, Water.....	J. T. Case.....	108, 757
Wheel, Water.....	F. G. Coggin.....	108, 970
Wheel, Water.....	B. J. Barber.....	109, 099
Wheel, Water.....	W. Blako.....	109, 170
Wheel, Water.....	J. A. Morgan.....	109, 335
Wheel, Water.....	K. and T. Cox.....	109, 380
Wheel, Water.....	D. Reynolds.....	109, 664
Wheel, Water.....	W. A. Terry.....	109, 685
Wheel, Water.....	G. W. Wernitz.....	109, 784
Wheel, Water.....	W. H. Elmer.....	109, 885
Wheel, Water.....	M. Gregg.....	109, 891
Wheel, Water.....	M. Millard.....	109, 925
Wheel, Water.....	J. Turner and S. Woodward.....	109, 972
Wheel, Water.....	D. W. Case.....	110, 009
Wheel, Water.....	R. Stinson.....	110, 169
Wheel, Water.....	J. W. Bookwalter.....	110, 544
Wheel, water, Combination.....	J. and H. Fuller.....	100, 746
Wheel, water, Current.....	A. W. Storey.....	98, 891
Wheel, water, Power.....	J. Nipp, jr.....	106, 715
Wheel, water, Regulator.....	H. D. Snow.....	100, 942
Wheel, Wheelbarrow.....	G. Harris.....	105, 939
Wheel, Wind.....	E. S. Smith.....	99, 363
Wheel, Wind.....	C. Mahler.....	100, 538
Wheel, Wind.....	P. Heald.....	103, 742
Wheel, Wind.....	C. H. St. Clair.....	104, 918
Wheel, Wind.....	J. C. Coleman and G. Strayer.....	105, 915
Wheel, Wind.....	J. O. Heyworth.....	107, 372
Wheel, Wind.....	B. C. Terry.....	107, 563
Wheel, Wind.....	J. O. Heyworth and H. E. Fessel.....	108, 593
Wheel, Wind.....	J. H. S. and G. W. Kimble.....	109, 911
Whiffletree.....	J. V. Norton.....	99, 936
Whiffletree.....	J. J. Adair.....	103, 118
Whiffletree.....	A. Green.....	105, 065
Whiffletree, Safety.....	M. Stone.....	103, 679
Whiffletree trace-hook.....	C. C. Bradley and B. F. Upson.....	105, 899
Whip.....	A. C. Rand.....	101, 912
Whip.....	A. C. Rand.....	101, 913
Whip.....	A. C. Rand.....	101, 914
Whip.....	A. C. Rand.....	101, 915
Whip.....	L. Hull.....	102, 007
Whip.....	A. C. Rand.....	102, 863
Whip.....	L. Hull.....	103, 467
Whip, Detachably tipped.....	P. Boyden.....	108, 679
Whip-holder.....	N. Hanchett.....	107, 175
Whip-holder for carriages.....	E. W. Scott.....	110, 503
Whip, Safety-socket for.....	W. D. Putnam.....	103, 368
Whips, Method of covering.....	V. W. Crowsen.....	104, 433
Whip-socket.....	E. Chamberlin.....	102, 221
Whip-socket.....	E. Chamberlin.....	106, 998
Whip-socket and rein-holder.....	J. R. Finney.....	101, 247
Whip-socket ring.....	J. J. Hillman.....	105, 574
Whisky and other spirits, Apparatus for ageing.....	J. P. Greeley.....	109, 611
Whisky and other spirits, Treating.....	O. Marland.....	98, 784
Whisky, &c., Rectifying.....	H. Fake.....	105, 788
Whisky, Rectifying, during distillation.....	H. Fake.....	99, 175
Whistle, Speaking-tube.....	T. J. Woolcocks.....	103, 406
White-lead, Manufacture of.....	J. Cuddy and G. S. Selden.....	104, 434
White-lead, Manufacture of.....	J. Cuddy.....	105, 431
White-lead, Manufacture of.....	C. W. Dwelle.....	108, 571
White-lead, Manufacture of.....	R. F. Hatfield.....	109, 125
Wick-tube for lamps.....	J. H. Gray.....	100, 285
Winding and spooling machinery, Traverse-motion for.....	J. E. Atwood.....	109, 708
Winding-machine.....	S. Eccles.....	109, 502
Winding-watch.....	A. E. Guyot.....	101, 859
Windlass.....	A. Hitchcock.....	105, 682
Windlass.....	A. Russell.....	105, 982
Windlass.....	E. and G. N. Waterbury.....	110, 521
Windlass, Adjustable.....	J. S. Brown.....	100, 594
Windlass, Oyster-dredge.....	T. Howard and O. Reeder.....	99, 900



*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Windmill.....	W. Peck.....	100, 061
Window.....	E. W. Giddings.....	104, 299
Window.....	T. Bullivant.....	108, 443
Window and door-screen.....	D. Goodwillie.....	108, 348
Window-blind.....	T. Donato.....	103, 854
Window-blind.....	S. Eich.....	104, 717
Window-blind.....	S. Pocock.....	108, 182
Window-blind.....	J. P. Boyd.....	108, 557
Window-blind, Folding.....	F. R. Osgood.....	108, 819
Window-blind, Machine for wire.....	B. C. Davis.....	101, 107
Window-button.....	S. C. Trubee.....	99, 263
Window-curtains, Apparatus for operating.....	J. Stephens and J. Collins.....	105, 508
Window-fastening.....	H. St. John.....	109, 357
Window-frame.....	A. J. Cleveland.....	99, 760
Window-frame.....	A. W. Stine.....	106, 634
Window-frame.....	W. H. Griffin.....	109, 892
Window-guard.....	W. K. Thomas.....	104, 228
Window-guard against flies and mosquitoes.....	E. S. Logg.....	101, 285
Window-jack.....	S. P. Loomis.....	98, 605
Window of railroad-cars, Deflector for.....	W. Conrad.....	107, 163
Window, Railroad-car.....	G. S. Knapp.....	98, 981
Window-sash.....	H. L. Myers.....	102, 303
Window-sash and fastener.....	E. Smith.....	105, 137
Window-sash, Machine for dovetailing.....	D. W. C. Smith.....	107, 555
Window-sash, Machine for tenoning.....	F. G. Chapman.....	107, 222
Window-sash weight.....	J. T. Forrester.....	108, 994
Window-screen.....	D. N. Hurlbut.....	99, 197
Window-screen.....	G. Shatswell.....	102, 872
Window-screen.....	A. C. Brown.....	103, 010
Window-screen, Extension.....	J. T. Kimball and B. F. Hebard.....	98, 601
Window-screen frame.....	H. R. Dexter.....	109, 395
Windows, Device for operating.....	J. S. Lester.....	106, 268
Window-shade.....	W. Strunk.....	109, 271
Window-shade.....	W. S. Rice.....	109, 758
Window-shade, Adjustable.....	E. W. Hastings.....	107, 502
Window-shade, Cord-tension device for.....	C. H. Miller.....	103, 069
Window-shade fixtures.....	D. W. De Forest.....	101, 440
Window-shade holder.....	E. J. Robinson.....	100, 558
Window-shades, Device for cutting slats for.....	F. A. Bixler.....	109, 457
Window-shades, Method of hanging.....	H. W. Olney.....	104, 989
Windows, Mode of attaching cornice to.....	A. Peple.....	101, 153
Windows, Spring-bolt for.....	M. Judd.....	104, 465
Window, Stand for cleaning.....	E. Herdster.....	107, 493
Window-stop.....	W. L. Beckwith.....	99, 523
Window-washer and scrubbing-pad.....	J. C. Hull.....	1' 8, 144
Window-washer, Rotary.....	G. M. Barth.....	99, 814
Wind-wheel, Horizontal.....	J. A. Vaughn.....	99, 980
Wines, sirups, &c., Filter for.....	J. Strauss.....	109, 467
Wiping-apparatus for feed and other rollers.....	L. Crawford.....	107, 667
Wire.....	J. S. Parsons.....	107, 953
Wire-heddles, Mechanism for making.....	E. T. Hertle and R. Thompson.....	102, 122
Wire-cloth for wire-screens.....	J. G. Frick.....	107, 171
Wire-covering machine.....	A. Giraudat.....	102, 110
Wire-cutter.....	F. Carew.....	107, 334
Wire-cutter and shears, Combined.....	C. Brombacher.....	98, 843
Wire, Die for drawing.....	J. D. Alvord.....	102, 463
Wire for wire-goods.....	W. F. Collier.....	107, 006
Wire-fence, Wire-tightener for.....	F. Fanning.....	101, 601
Wire, Perforated.....	S. Beatty.....	102, 356
Wire-rope, Apparatus for transporting loads on.....	C. Hodgson.....	103, 317
Wire, Turning and galvanizing.....	E. H. Hill.....	101, 264
Wood, &c., Drying, preserving, and coloring.....	H. Haupt.....	99, 186
Wood and coal dumper for railways.....	R. B. Robbins.....	109, 346
Wood and other pavements, Ramming-machine for.....	A. L. Lausing.....	109, 745
Wood, Apparatus for giving form to.....	G. R. Mather.....	108, 805
Wood, Apparatus for preserving.....	F. A. Stevens.....	102, 725
Wood-bending machine.....	J. W. Martin.....	99, 925
Wood-bending machine.....	J. Fipps.....	108, 992
Wood, Carving.....	M. T. Boutwell.....	100, 848
Wood, Cement for coating and preserving.....	H. M. Westman.....	103, 661
Wood, Coloring and preserving.....	F. Lear.....	109, 027
Wood, Composition for and mode of ornamenting.....	T. H. Davis.....	102, 660
Wood, compressed, Manufacture of articles of.....	S. P. Wheeler.....	101, 552
Wooden-pins, Machine for making.....	R. H. Watson.....	108, 859
Wood, Fillings for.....	T. R. Sherry.....	103, 769
Wood for inlaying, Machine for preparing.....	C. F. Ritchell.....	100, 927
Wood for painting, Composition for preparing.....	J. Babcock.....	99, 618
Wood for railroad-ties and for other purposes, Preserving.....	A. B. Tripler.....	104, 917
Wood, Machine for bending.....	W. D. Williams.....	102, 637
Wood, Machine for bending.....	J. K. B. Solomon.....	106, 880

*Alphabetical list of inventions—Continued.*

Invention or discovery.	Name of patentee.	No.
Wood, Machine for bending	J. McMichael	110, 262
Wood, Machine for bundling	J. Rushworth	108, 731
Wood, Machine for polishing	F. G. Chapman	100, 503
Wood, metal, &c., Composition for coating	P. S. Devlan	102, 922
Wood, Method of inlaying	T. W. and H. K. Porter	107, 097
Wood, Method of inlaying	J. S. Baldwin	107, 150
Wood, Method of uniting	J. A. Thompson	110, 089
Wood-molding machine	A. S. Gear	106, 685
Wood-moldings, Tool for cutting	C. E. Boynton	107, 653
Wood on railway-cars, Apparatus for loading	J. Nicholson	106, 274
Wood-paper stock, Manufacture of	G. H. Bliss and M. Rees	103, 968
Wood, Preserving	A. B. Tripler	104, 916
Wood, Preserving	A. J. Sheldon	106, 625
Wood, Preserving	J. R. Hays	107, 904
Wood, Preserving	E. Webb	108, 659
Wood, Preserving and hardening	B. R. Nickerson	107, 620
Wood, Process and apparatus for treating	I. Hayford	101, 012
Wood, Process of treating	S. P. Wheeler	101, 553
Wood-pulp machine	S. C. Taft	101, 785
Wood-screw machine	J. M. Alden	110, 532
Wood-screw machinery, Feeding-mechanism for	C. D. Rogers	108, 295
Wood, Seasoning	R. A. Douglas	102, 665
Wood, Seasoning and preserving	J. C. Day	100, 380
Wood, Seasoning and preserving	C. M. Cresson	109, 872
Wood, Seasoning and preserving	C. M. Cresson	109, 873
Wood-splitting machine	R. D. Silverwood	100, 679
Wood-splitting machine	E. Coogan	108, 883
Wood-splitting machine	W. A. Allen	110, 415
Wood to pulp, Apparatus for reducing	G. Ames	105, 622
Wood, Treating, to obtain useful products	T. Schwartz	101, 330
Wood-working, Method of	N. Jenkins	99, 201
Wool and hair, Cleaning	C. F. A. Simonin and E. W. Collin	102, 166
Wool, &c., Apparatus for combing and preparing	E. Holden	98, 966
Wool, &c., Machine for burring and cleaning	Z. Parkhurst	101, 763
Wool, Apparatus for oiling	T. A. Campbell	98, 922
Wool, Cleansing	E. T. Richter	106, 871
Wool, Composition for oiling	J. Shaw	106, 219
Wool, Compound for treating	H. H. Capamagian	108, 756
Wool, cotton, &c., Cleaning	G. H. Pond	110, 495
Wool-drier	L. S. Blake	105, 891
Wool, Machine for burring on the skin	G. F. Dockham	103, 309
Wool, Machine for burring on the skin	E. H. Ashcroft	110, 418
Wool, Machine for picking and dusting	M. Bliss	101, 218
Wool, Machine for spinning	E. Kilbourn	103, 052
Wool, Removing burrs from	P. Casson	107, 447
Work-box	J. E. Marvel	103, 273
Work-holder	J. E. Gilman	102, 534
Work-holder	N. Clute and O. W. Marshall	108, 569
Working-hides, scouring leather, &c., Machinery for	T. R. Williams	106, 439
Worms in fruit-trees, Composition for destroying	S. Kepner	108, 030
Wrapper for seeds, &c.	R. G. Kiener	101, 275
Wrecking-tongs or excavator	R. Hunter	98, 870
Wrench	R. Morrison	98, 515
Wrench	G. C. Taft	98, 644
Wrench	A. B. Lipsey	98, 698
Wrench	G. J. Capewell	98, 847
Wrench	A. G. Coes	100, 602
Wrench	L. Chapman	100, 978
Wrench	J. Faessler	101, 114
Wrench	O. J. Smith	102, 053
Wrench	J. F. Nordquist	102, 307
Wrench	G. Utley	102, 336
Wrench	B. F. Buxton	102, 770
Wrench	W. F. Wolfkiel	103, 268
Wrench	T. C. Purington	103, 653
Wrench	M. Redlinger	103, 656
Wrench	J. J. Hull	105, 336
Wrench	J. F. Roman	105, 372
Wrench	O. J. Smith	105, 604
Wrench	C. H. Miller	105, 827
Wrench	S. Chapin	106, 467
Wrench	H. Fessler and R. V. Jones	106, 475
Wrench	D. C. Stillson	107, 304
Wrench	H. Tregellas	107, 425
Wrench	F. P. Rand	107, 539
Wrench	O. C. Lawbaugh	107, 790
Wrench	D. Campbell and W. Saul	107, 871
Wrench	J. F. Cass	108, 330
Wrench	G. C. Taft	108, 738
Wrench	E. J. Worcester	108, 747
Wrench	P. Burress and C. Cline	109, 493

*Alphabetical list of designs.*

Invention or discovery.	Name of patentee.	No.
Wrench .....	C. Knisely .....	109, 913
Wrench .....	E. S. Scripture .....	109, 949
Wrench, Duplex .....	A. B. Davis .....	106, 129
Wrench, Manufacture of .....	J. Richards .....	109, 665
Wrench, Pipe .....	J. A. Wilcox .....	104, 913
Wrench, Pipe and bolt .....	L. Frey and G. Macardle .....	102, 390
Wrenches, Machine for forging the heads of .....	A. G. Coes .....	104, 931
Wringer, Clothes .....	W. Cooper .....	98, 566
Wringer, Clothes .....	A. Magowan .....	101, 749
Wringer, Clothes .....	E. G. W. Bartlett .....	103, 282
Wringer, Clothes .....	L. Shmeltzer .....	105, 375
Wringer, Clothes .....	C. H. De Knight .....	106, 136
Wringer, Clothes .....	J. McLaughlin .....	107, 518
Wringer, Clothes .....	R. E. Ferguson .....	107, 893
Wringer, Clothes .....	A. O'Dell .....	103, 620
Wringer, Mop .....	H. L. Ennes .....	109, 307
Wringers, &c., Rubber-roller for .....	D. H. Chamberlain .....	104, 826
Wringers, Elastic-roller for .....	A. O. Bourn .....	103, 579
Wringers, Roller shaft for .....	L. H. Whitney .....	110, 098
Wringing-machine .....	E. G. W. Bartlett .....	108, 674
Wrought-iron chairs for railroads, Machine for making .....	W. Van Anden .....	102, 068
<b>X.</b>		
Xylodine and its compounds, Manufacture of .....	D. Spill .....	101, 175
Xylogloline and other explosive agents, Manufacture of .....	C. Dittmar .....	99, 070
Xylogloline, Explosive agent called .....	C. Dittmar .....	99, 069
<b>Y.</b>		
Yarn, Apparatus for steaming .....	J. H. Higgins .....	99, 189
Yarn, Machine for brushing .....	J. Brady .....	103, 100
Yarns or warps, Machine for beaming .....	G. Draper .....	110, 218
Yarn-washing machine .....	E. Haefely .....	102, 256
Yeast for distillers, Manufacture of .....	J. Wolff .....	99, 615
Yeast, Manufacture of .....	H. Fleischmann .....	102, 387
Yoke, Horse .....	A. B. Beaumont .....	110, 541
<b>Z.</b>		
Zinc, Apparatus for cooling the vapors of oxide of .....	J. E. Burrows .....	108, 965

## DESIGNS.

<b>A.</b>		
Advertising-desk .....	A. Brummel .....	4, 391
Arrow-gun .....	C. Robinson .....	4, 050
Ax .....	C. B. Drew .....	4, 029
Ax .....	E. Hurst .....	4, 060
<b>B.</b>		
Back of a playing-card .....	S. L. Cohen .....	4, 536
Back of a playing-card .....	S. L. Cohen .....	4, 537
Badge .....	W. Riker .....	4, 372
Band-saw frame .....	J. Richards .....	4, 145
Baptismal font .....	D. C. Ripley .....	3, 842
Bar, Shutter .....	J. A. Ruff .....	4, 127
Baschlik .....	M. Landenberger .....	4, 164
Base of a hot-air furnace .....	R. Boyd and J. C. Hart .....	4, 504
Bedouin or Arab .....	T. Dolan .....	3, 881
Bedouin or Arab .....	T. Dolan .....	3, 882
Bedouin or Arab .....	T. Dolan .....	4, 158
Bell-pull back-plate .....	J. A. Ruff .....	4, 111
Bell-pull back-plate .....	J. A. Ruff .....	4, 112
Berry-box .....	J. W. Leslie .....	4, 359
Blackboard-eraser .....	J. H. Atwater .....	4, 390
Block of soap .....	A. Van Haagen .....	4, 534
Blotting-pad .....	J. S. Bryant .....	3, 971
Blower-holder .....	F. W. Brocksieper .....	4, 361
Boiler, Kitchen .....	W. R. Scaife .....	4, 224
Boot and shoe pattern .....	J. M. Dutton .....	4, 198
Boot, Carriage .....	E. Wells .....	4, 322
Bottle .....	L. J. Wicks .....	3, 836
Bottle .....	G. J. Byrne .....	3, 846
Bottle .....	G. J. Byrne .....	3, 847

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Bottle.....	G. J. Byrne.....	3,848
Bottle.....	J. H. Gambart.....	3,926
Bottle.....	O. H. P. Rose.....	4,170
Bottle.....	J. Mackintire.....	4,204
Bottle and cup.....	J. Mackintire.....	4,205
Bottle, Ink.....	A. French.....	3,871
Box, Collar.....	J. R. Jerauld and H. L. Holmes.....	3,894
Box, Collar.....	S. F. Hilton.....	4,336
Box, Collar.....	A. Aronson.....	4,446
Box, Collar and cuff.....	F. Field.....	3,870
Boxes for tops of bureaus.....	C. Kilburn.....	4,201
Box for bureau.....	C. Kilburn.....	4,423
Box for holding and displaying tapes, braids, &c.....	S. B. Fleischer.....	4,384
Box for putting up paper-cuffs.....	G. Faul.....	4,471
Box for the top of bureaus.....	C. Kilburn.....	4,316
Box for the top of bureaus.....	C. Kilburn.....	4,350
Box for the top of bureaus.....	C. Kilburn.....	4,351
Box for the top of bureaus.....	C. Kilburn.....	4,352
Box for the top of bureaus.....	C. Kilburn.....	4,357
Box for the top of bureaus.....	C. Kilburn.....	4,460
Box, Paper-collar.....	F. Field.....	3,869
Box, Paper-collar.....	W. H. Richardson.....	4,223
Brace for school-desk.....	J. K. McCullough and F. W. Smith.....	4,206
Bracelet.....	F. Wessel.....	4,256
Bracelet.....	T. I. Smith.....	4,516
Bracket.....	M. D. Jones.....	3,953
Bracket.....	A. D. Judd.....	3,992
Bracket.....	J. H. Bellamy.....	4,250
Bracket.....	J. H. Bellamy.....	4,268
Bracket.....	B. A. Ward.....	4,454
Bracket.....	B. A. Ward.....	4,455
Bracket.....	J. H. Bellamy.....	4,465
Bracket.....	J. H. Bellamy.....	4,466
Bracket, Lamp.....	P. Cinquini.....	4,086
Bracket, Metallic.....	A. D. Judd.....	4,077
Brake-wheel.....	A. Merriman.....	3,955
Brand.....	M. Hoffheimer.....	4,004
Bread-toaster.....	S. Faucett and H. R. Corkhill.....	3,840
Breast-strap slide.....	J. Henderson.....	4,015
Broiler, Wire.....	W. J. Johnson and H. A. Hildreth.....	4,163
Broom.....	R. W. English.....	4,506
Buckle.....	J. E. Smith.....	4,426
Buckle.....	J. J. Bell.....	4,458
Buggy-body.....	W. M. Armstrong.....	3,974
Building-front.....	J. Fraser, F. Furness and G. W. Hewitt.....	4,159
Bureaus, Box for the top of.....	C. Kilburn.....	4,151
Burial-casket.....	C. Dahlinger.....	3,913
Burial-casket.....	P. J. Marchal.....	4,056
Burner, Lamp.....	J. B. Alexander.....	4,148
Bust.....	H. Berger.....	3,941
Butt, Door.....	J. A. Ruff.....	4,120

## C.

Cake-basket or fruit-tray.....	W. Parkin.....	3,877
Cake-dish.....	G. Gill.....	3,989
Calendar.....	H. C. Heistad.....	4,014
Candlestick.....	H. Whitney.....	4,022
Can, Metal.....	H. Everett.....	3,839
Carpet-pattern.....	C. T. Meyer.....	3,830
Carpet-pattern.....	C. T. Meyer.....	3,831
Carpet-pattern.....	C. T. Meyer.....	3,832
Carpet-pattern.....	J. Crabtree.....	3,837
Carpet-pattern.....	J. Crabtree.....	3,838
Carpet-pattern.....	J. T. Webster.....	3,879
Carpet-pattern.....	J. T. Webster.....	3,880
Carpet-pattern.....	H. Christie.....	3,892
Carpet-pattern.....	L. G. Malkin.....	3,927
Carpet-pattern.....	L. G. Malkin.....	3,928
Carpet-pattern.....	J. Smith.....	3,930
Carpet-pattern.....	J. Smith.....	3,931
Carpet-pattern.....	H. G. Thompson.....	3,932
Carpet-pattern.....	H. G. Thompson.....	3,933
Carpet-pattern.....	H. G. Thompson.....	3,934
Carpet-pattern.....	H. G. Thompson.....	3,935
Carpet-pattern.....	H. G. Thompson.....	3,936
Carpet-pattern.....	H. G. Thompson.....	3,937
Carpet-pattern.....	H. G. Thompson.....	3,938
Carpet-pattern.....	H. G. Thompson.....	3,939
Carpet-pattern.....	H. G. Thompson.....	3,940
Carpet-pattern.....	R. R. Campbell.....	3,976

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Carpet-pattern .....	E. J. Ney .....	3, 977
Carpet-pattern .....	E. J. Ney .....	3, 978
Carpet-pattern .....	E. J. Ney .....	3, 979
Carpet-pattern .....	E. J. Ney .....	3, 980
Carpet-pattern .....	E. J. Ney .....	3, 981
Carpet-pattern .....	E. J. Ney .....	3, 982
Carpet-pattern .....	E. J. Ney .....	3, 983
Carpet-pattern .....	J. Crabtree .....	4, 026
Carpet-pattern .....	J. Crabtree .....	4, 027
Carpet-pattern .....	J. Crabtree .....	4, 028
Carpet-pattern .....	I. Foster .....	4, 032
Carpet-pattern .....	W. Kerr .....	4, 035
Carpet-pattern .....	E. J. Ney .....	4, 039
Carpet-pattern .....	E. J. Ney .....	4, 040
Carpet-pattern .....	R. R. Campbell .....	4, 081
Carpet-pattern .....	R. R. Campbell .....	4, 082
Carpet-pattern .....	R. R. Campbell .....	4, 083
Carpet-pattern .....	R. R. Campbell .....	4, 084
Carpet-pattern .....	E. J. Ney .....	4, 090
Carpet-pattern .....	E. J. Ney .....	4, 091
Carpet-pattern .....	E. J. Ney .....	4, 092
Carpet-pattern .....	E. J. Ney .....	4, 093
Carpet-pattern .....	E. J. Ney .....	4, 094
Carpet-pattern .....	H. Christie .....	4, 176
Carpet-pattern .....	H. Christie .....	4, 177
Carpet-pattern .....	W. Kerr .....	4, 180
Carpet-pattern .....	H. Christie .....	4, 252
Carpet-pattern .....	J. Crabtree .....	4, 253
Carpet-pattern .....	J. Allinson .....	4, 258
Carpet-pattern .....	J. Dornan .....	4, 294
Carpet-pattern .....	J. Crabtree .....	4, 305
Carpet-pattern .....	A. Heald .....	4, 311
Carpet-pattern .....	A. Heald .....	4, 312
Carpet-pattern .....	A. Heald .....	4, 313
Carpet-pattern .....	A. Heald .....	4, 314
Carpet-pattern .....	W. Kerr .....	4, 315
Carpet-pattern .....	R. R. Campbell .....	4, 324
Carpet-pattern .....	R. R. Campbell .....	4, 325
Carpet-pattern .....	R. R. Campbell .....	4, 326
Carpet-pattern .....	R. R. Campbell .....	4, 327
Carpet-pattern .....	R. R. Campbell .....	4, 328
Carpet-pattern .....	R. R. Campbell .....	4, 329
Carpet-pattern .....	R. R. Campbell .....	4, 330
Carpet-pattern .....	R. R. Campbell .....	4, 331
Carpet-pattern .....	R. R. Campbell .....	4, 332
Carpet-pattern .....	R. R. Campbell .....	4, 333
Carpet-pattern .....	E. J. Ney .....	4, 339
Carpet-pattern .....	E. J. Ney .....	4, 340
Carpet-pattern .....	E. J. Ney .....	4, 341
Carpet-pattern .....	E. J. Ney .....	4, 342
Carpet-pattern .....	E. J. Ney .....	4, 343
Carpet-pattern .....	R. R. Campbell .....	4, 394
Carpet-pattern .....	R. R. Campbell .....	4, 395
Carpet-pattern .....	R. R. Campbell .....	4, 396
Carpet-pattern .....	R. R. Campbell .....	4, 397
Carpet-pattern .....	J. Crabtree .....	4, 398
Carpet-pattern .....	E. J. Ney .....	4, 411
Carpet-pattern .....	E. J. Ney .....	4, 412
Carpet-pattern .....	E. J. Ney .....	4, 413
Carpet-pattern .....	E. J. Ney .....	4, 414
Carpet-pattern .....	J. Crabtree .....	4, 420
Carpet-pattern .....	J. Crabtree .....	4, 448
Carpet-pattern .....	A. Beck .....	4, 480
Carpet-pattern .....	A. Beck .....	4, 481
Carpet-pattern .....	A. Beck .....	4, 482
Carpet-pattern .....	A. Heald .....	4, 493
Carpet-pattern .....	A. Heald .....	4, 494
Carpet-pattern .....	H. S. Kerr .....	4, 507
Carpet-pattern .....	W. Mallinson .....	4, 508
Carpet-pattern .....	W. Mallinson .....	4, 509
Carpet-pattern .....	H. S. Kerr .....	4, 540
Carriage .....	A. S. Dodd .....	4, 306
Carriage-bed .....	H. Killam .....	4, 435
Carriage-body .....	A. S. Clapp .....	3, 820
Carriage, Children's .....	G. H. Mellen .....	3, 899
Carriage-door handle .....	D. W. Thomas .....	4, 323
Cars, passenger-elevator, Overhead work for .....	O. Tufts .....	4, 020
Case of a parlor-organ .....	G. Woods .....	4, 546
Casing for soda-water apparatus .....	J. W. Tufts .....	3, 816
Caster .....	G. B. Garret .....	3, 858
Caster-bottle .....	W. Parkin .....	4, 438

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Caster, Table .....	C. H. Latham .....	4, 166
Caster, Table .....	D. Sherwood and G. D. Dudley .....	4, 297
Caster, Table .....	W. Parkin .....	4, 437
Caster, Wheel-holding block for .....	S. J. Parker .....	4, 041
Center-piece .....	H. Berger .....	3, 947
Center-piece .....	S. Kellett .....	4, 478
Center-piece .....	S. Kellett .....	4, 479
Center-piece for ceilings .....	J. W. Reeves .....	4, 512
Center-piece for ceilings .....	J. W. Reeves .....	4, 513
Chain .....	J. V. and C. F. Waldron .....	4, 543
Chair, Arm .....	W. E. Cameron .....	4, 269
Chandelier .....	P. Cinquini .....	4, 085
Chimney, Lamp .....	E. Foster .....	3, 857
Chimney, Lamp .....	G. W. Moyers .....	4, 038
Church-window glass .....	S. West .....	4, 492
Clamp for trunk-cover .....	T. L. Rivers .....	4, 355
Clamp, Fruit-jar .....	P. J. Bresenback .....	4, 522
Clamp, Trunk-cover .....	W. S. Jessup .....	4, 200
Clock-case .....	E. Ingraham .....	3, 850
Clock-case .....	E. Ingraham .....	3, 851
Clock-case .....	N. Miller .....	4, 237
Clock-case .....	R. Dunn .....	4, 307
Clock-case .....	R. Dunn .....	4, 308
Clock-case .....	R. Dunn .....	4, 309
Clock-case .....	S. B. Jerome .....	4, 338
Clock-case .....	R. Dunn .....	4, 421
Clock-case .....	R. Dunn .....	4, 524
Clock-case front .....	S. B. Jerome .....	4, 278
Clock-case front .....	S. C. Spring .....	4, 290
Clock-case sash .....	S. B. Jerome .....	4, 422
Clock-frame .....	G. B. Owen .....	3, 815
Clock-front .....	N. Müller .....	3, 883
Clock-front .....	N. Müller .....	3, 900
Clock-front .....	J. H. Bellamy .....	4, 023
Clock-front .....	J. H. Bellamy .....	4, 299
Clock-front .....	J. H. Bellamy .....	4, 375
Clock-front .....	N. Müller .....	4, 450
Clock-front .....	B. A. Ward .....	4, 456
Clock-front .....	N. Müller .....	4, 496
Coal-box .....	R. W. Newberry .....	4, 510
Coal-box .....	R. W. Newberry .....	4, 511
Coal-hod .....	J. and J. K. Pitts .....	4, 451
Coffin .....	E. T. Smith and J. S. Winston .....	4, 387
Collar-box .....	G. K. Snow .....	4, 146
Collar-box .....	S. F. Hilton .....	4, 277
Collar-box .....	A. L. Elliott .....	4, 383
Collar, Fur .....	J. H. Kappelhoff and S. Rauh .....	4, 179
Column for coach-lamps, Glass .....	T. Bondren .....	4, 002
Comb .....	E. F. Coffin .....	3, 986
Corn-husker .....	A. T. Morris .....	4, 262
Corset .....	D. H. Fauning .....	4, 366
Corset .....	D. H. Fauning .....	4, 367
Counting-house calendar, Adjustable .....	S. S. Coe .....	3, 963
Cup, Jelly .....	J. S. and T. B. Atterbury .....	4, 225
Curtain-cornice, &c. ....	H. Whittemore .....	4, 345
Cuspadore .....	C. and J. Roebuck .....	4, 318
Cylinder and frame of steam-engine .....	G. Sanford .....	4, 452
D.		
Desk, School .....	W. P. Uhlinger .....	4, 068
Desk, School .....	N. O. Tiffany .....	4, 488
Dishes, Ornamentation of .....	E. Bennett .....	4, 175
Dog-muzzle .....	J. and H. Braentigam .....	4, 055
Dog-muzzle .....	T. J. Meyers .....	4, 168
Door-bell .....	W. Allport .....	4, 214
Door-bolt .....	F. Fogelstrand .....	4, 472
Door-pull .....	F. W. Brocksieper .....	4, 364
Dovetail .....	H. H. Evarts .....	4, 031
Drawer-pull .....	W. Gorman .....	3, 915
Drawer-pull .....	A. D. Judd .....	4, 000
Drawer-pull .....	A. D. Judd .....	4, 016
Drawer-pull .....	A. P. Seymour .....	4, 212
Drawer-pull .....	N. Merriam .....	4, 502
Dress-trimming .....	M. Landnoeryer .....	4, 443
Dress-trimming .....	R. Werner .....	4, 500
Drilling-machine .....	F. A. Pratt .....	4, 439
E.		
Egg-cup and salt-stand .....	G. Wilkinson .....	3, 817
Emery-wheel .....	F. J. Frazier .....	4, 056



*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Escutcheon .....	L. Kreuzinger .....	4, 104
Escutcheon .....	L. Kreuzinger .....	4, 105
Escutcheon .....	L. Kreuzinger .....	4, 106
Escutcheon .....	J. A. Ruff .....	4, 121
Escutcheon .....	J. A. Ruff .....	4, 122
Escutcheon, Door .....	J. A. Ruff .....	3, 823
Escutcheon, Door .....	J. A. Ruff .....	3, 824
Escutcheon, Door .....	J. H. Ruff .....	3, 825
Escutcheon, Door .....	J. A. Ruff .....	3, 826
Escutcheon for doors .....	W. Gorman .....	3, 916
F.		
Fabric, Knitted .....	T. Dolan .....	3, 964
Fabric, Knitted .....	M. Landenberger .....	4, 230
Fabric, Knitted .....	M. Landenberger .....	4, 270
Fabric, Knitted .....	M. Landenberger .....	4, 271
Fabric, Knitted .....	T. Dolan .....	4, 334
Fabric, Knitted .....	E. Greasley .....	4, 386
Fabric, Net .....	R. J. Jefford .....	4, 228
Fabric, Net .....	A. G. Jennings .....	4, 229
Fabric, Net .....	R. H. Jefford .....	4, 337
Fabric, Shawl .....	M. Landerberger .....	4, 272
Fabric, Shawl .....	M. Landerberger .....	4, 358
Fabric, Stocking .....	T. Dolan .....	3, 965
Fabric, Stocking .....	T. Dolan .....	3, 966
Fabric, Stocking .....	T. Dolan .....	4, 003
Fabric, Stocking .....	T. Dolan .....	4, 157
Fabric, Stocking .....	C. Button .....	4, 251
Fabric, Woven .....	R. C. and J. W. Taft and W. B. Weeden .....	4, 518
Fabric, Woven .....	R. C. and J. W. Taft and W. B. Weeden .....	4, 519
Fabric, Woven .....	R. C. and J. W. Taft and W. B. Weeden .....	4, 520
Fabric, Woven .....	R. C. and J. W. Taft and W. B. Weeden .....	4, 532
Face-plate for locks .....	H. H. Elwell .....	4, 430
Face-plate for locks .....	H. H. Elwell .....	4, 431
Face-plate for locks for sliding-doors .....	W. Gorman .....	4, 034
Face-plate of a sash-lock .....	C. H. Euleston .....	4, 470
Fence, Rustic .....	J. Millar .....	4, 461
Fire-dog .....	F. W. Brocksieper .....	4, 363
Fire-set holder .....	F. W. Brocksieper .....	4, 362
Floor-cloth pattern .....	C. T. Meyer .....	3, 875
Floor-cloth pattern .....	H. Christie .....	3, 896
Floor-cloth pattern .....	H. Christie .....	3, 897
Floor-cloth pattern .....	C. T. Meyer .....	3, 956
Floor-cloth pattern .....	C. T. Meyer .....	3, 957
Floor-cloth pattern .....	C. T. Meyer .....	3, 958
Floor-cloth pattern .....	J. Paterson .....	4, 007
Floor-cloth pattern .....	J. T. Webster .....	4, 139
Floor-cloth pattern .....	J. T. Webster .....	4, 140
Floor-cloth pattern .....	C. T. Meyer .....	4, 207
Floor-cloth pattern .....	C. T. Meyer .....	4, 208
Floor-cloth pattern .....	C. T. Meyer .....	4, 209
Floor-cloth pattern .....	V. Meyer .....	4, 210
Floor-cloth pattern .....	V. Meyer .....	4, 222
Floor oil-cloth pattern .....	J. Hutchison .....	3, 990
Floor oil-cloth pattern .....	J. Hutchison .....	3, 991
Floor oil-cloth pattern .....	J. Meyer .....	4, 444
Floor oil-cloth pattern .....	C. T. Meyer .....	4, 484
Floor oil-cloth pattern .....	C. T. Meyer .....	4, 485
Floor oil-cloth pattern .....	C. T. Meyer .....	4, 486
Floor oil-cloth or carpet pattern .....	C. T. Meyer .....	3, 876
Flower, Artificial .....	C. S. Baldwin .....	3, 895
Flower-pot .....	J. Leak .....	4, 273
Flower-pot .....	J. Leak .....	4, 449
Folding-door key .....	H. H. Elwell .....	3, 942
Fountain .....	J. Hegarty .....	4, 219
Fountain .....	B. Van Gaasbeek .....	4, 542
Frame .....	B. A. Ward .....	4, 453
Frame for a paper-bag machine .....	C. F. Annan .....	4, 503
Frame for a printing-press .....	J. Henry .....	4, 162
Frame for containing stationery articles .....	C. H. Wight .....	3, 863
Frame of an emery-grinder .....	A. Wallace .....	4, 321
Fruit-gatherer .....	J. S. and A. M. Barry .....	4, 535
Fruit-stand .....	H. Vasseur .....	4, 440
G.		
Gate .....	S. Macferran and E. Omensetter .....	4, 184
Gate-latch, Cradle-plate of .....	J. Johnson .....	4, 371
Generator, Oxygen .....	A. H. Carpenter .....	4, 056
Goods, Dress .....	M. Townsend .....	4, 388

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Goods, Knitted.....	M. Landerberger.....	4, 231
Goods, Knitted.....	M. Landerberger.....	4, 232
Glassware.....	W. M. Kirchner.....	4, 261
Glassware.....	J. Oesterling.....	4, 263
Glassware, Ornamentation of.....	W. M. Kirchner.....	3, 954
Glassware, Ornamentation of.....	C. Ballinger.....	4, 419
Glassware, Ornamentation of.....	J. S. and T. B. Atterbury.....	4, 457
Glassware, Ornamenting.....	J. H. Hobbs.....	3, 828
Glassware, Ornamenting.....	W. Leighton.....	3, 829
Glassware, Ornamenting.....	T. B. Atterbury.....	3, 854
Glassware, Ornamenting.....	J. Bryce.....	3, 855
Glassware, Ornamenting.....	W. T. Gillinder.....	3, 914
Glassware, Ornamenting.....	S. Hipkins.....	3, 972
Grate.....	H. B. Gayle.....	4, 033
Grinding-mill stand or frame.....	J. G. Baker.....	4, 141
Group of statuary.....	J. Rogers.....	3, 843
Group of statuary.....	J. Rogers.....	4, 287
Group of statuary.....	J. Rogers.....	4, 487
Group of tools, machinery, &c.....	E. A. Ellsworth.....	4, 442
H.		
Hair-crimper.....	H. A. Humphrey.....	4, 088
Hair-pin.....	G. W. Manson.....	4, 303
Hand-glass frame.....	J. H. Bellamy.....	4, 249
Handle cap for satchels.....	J. M. Riley.....	3, 908
Handle for spoons.....	E. C. Moore.....	3, 917
Handle for spoons, forks, ladles, &c.....	J. R. Wendt.....	3, 985
Handle of spoon, fork, &c.....	C. D. Hall.....	4, 348
Handle of spoons and other articles.....	A. Conradt.....	4, 227
Handle of spoons, forks, &c.....	J. Polhamus.....	4, 317
Hand-stamp.....	H. W. Hubbard and F. P. Follett.....	3, 967
Hand-stamp.....	A. L. Munson.....	4, 017
Hand-stamp.....	C. J. Mortimer.....	4, 037
Hand-stamp.....	S. J. Hoggson.....	4, 142
Hand-stamp.....	J. F. Pages.....	4, 296
Harness, Breast-collar for.....	W. R. Olmsted.....	4, 169
Harness, Breast-slide for.....	H. W. Minnemeyer.....	4, 353
Harness-mounting.....	C. Eisele.....	3, 952
Harness, Trace-carrier for.....	S. Reynolds.....	4, 354
Hat.....	I. B. Wentworth.....	4, 356
Head-band.....	W. S. Mingis.....	4, 436
Hinge.....	A. C. Kasson.....	4, 407
Hinge, School-seat.....	N. O. Tiffany.....	4, 489
Hoe.....	B. T. Stowell.....	4, 517
Hook, Coat and hat.....	W. R. Goodrich.....	4, 310
Horse-stall, Iron railing for.....	J. L. Jackson.....	4, 377
Horse-stall, Iron railing for.....	J. L. Jackson.....	4, 378
Horse-stall, Iron railing for.....	J. L. Jackson.....	4, 379
I.		
Ice, Machinery for making.....	T. Scheffler.....	3, 929
Ice-pitcher.....	H. Vassenr.....	3, 891
Inkstand.....	A. French.....	3, 812
Inkstand.....	J. W. June.....	3, 874
Inkstand.....	L. L. Tower.....	4, 291
Inkstand.....	H. Whitney.....	4, 292
Inkstand.....	D. Merritt.....	4, 408
J.		
Jelly-glass.....	W. Doyle.....	4, 260
Journal-box.....	P. P. Child.....	4, 293
K.		
Keeper for door-locks.....	H. H. Elwell.....	4, 432
Keeper for door-locks.....	H. H. Elwell.....	4, 429
Key for locks.....	W. T. Munger.....	3, 918
Key-ring tag.....	N. Stafford.....	4, 427
Knife, Tobacco.....	J. Kinzer.....	4, 036
Knob, Bell-pull.....	J. A. Ruff.....	4, 109
Knob, Bell-pull.....	J. A. Ruff.....	4, 110
Knob, Bell-pull.....	J. J. C. Smith.....	4, 129
Knob, Bell-pull.....	J. J. C. Smith.....	4, 130
Knob, Door.....	L. Krenzinger.....	4, 097
Knob, Door.....	L. Krenzinger.....	4, 098
Knob, Door.....	L. Krenzinger.....	4, 099
Knob, Door.....	L. Krenzinger.....	4, 100
Knob, Door.....	C. Kunze.....	4, 107

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Knob, Door .....	J. L. Leger .....	4, 108
Knob, Door .....	J. A. Ruff .....	4, 113
Knob, Door .....	J. A. Ruff .....	4, 114
Knob, Door .....	J. A. Ruff .....	4, 115
Knob, Door .....	J. A. Ruff .....	4, 116
Knob, Door .....	J. A. Ruff .....	4, 117
Knob, Door .....	J. A. Ruff .....	4, 118
Knob, Door .....	J. J. C. Smith .....	4, 131
Knob, Door .....	J. J. C. Smith .....	4, 132
Knob, Door .....	J. J. C. Smith .....	4, 133
Knob, Door .....	J. J. C. Smith .....	4, 134
Knob, Door .....	J. J. C. Smith .....	4, 135
Knob, Door .....	J. J. C. Smith .....	4, 136
Knob, Door .....	J. J. C. Smith .....	4, 137
Knob, Door .....	J. J. C. Smith .....	4, 138
Knob, Shutter .....	J. A. Ruff .....	4, 124
Knob, Shutter .....	J. A. Ruff .....	4, 125
Knob, Shutter .....	J. A. Ruff .....	4, 126
L.		
Label .....	J. S. Dunham .....	4, 030
Label .....	G. F. Gantz .....	4, 075
Lamp .....	R. S. Merrill .....	4, 089
Lamp .....	J. S. and T. B. Atterbury .....	4, 259
Lamp-chimney cleaner .....	C. Oblinger .....	4, 001
Lamp-chimney cleaner .....	E. T. Annis .....	4, 501
Lamp-fount .....	H. Whitney .....	4, 021
Lamp-shade .....	G. L. Smith and D. W. Kissam .....	4, 051
Lamp-shade, Glass .....	C. Dorfinger .....	4, 217
Lamps, Mica chimney for .....	C. and C. H. Colt .....	4, 087
Lamp-stand .....	J. S. and T. B. Atterbury .....	4, 298
Latch, Cupboard .....	W. Gorman .....	4, 335
Latch, Door .....	J. A. Ruff .....	4, 123
Latch, Gate .....	J. W. Still .....	4, 067
Latch, Outside-door .....	W. Gorman .....	3, 873
Letter, Ornamental .....	W. H. Clendinen .....	3, 948
Lid of a feed-cup in bird-cage .....	O. Lindeman .....	4, 380
Lock, Car .....	W. Gorman .....	4, 474
Lock-front .....	F. W. Brocksieper .....	4, 467
M.		
Masonic chart .....	J. Ames .....	3, 973
Match-safe .....	A. P. Seymour .....	4, 238
Match-safe .....	F. W. Brocksieper .....	4, 428
Medal .....	T. R. Timby .....	4, 499
Medallion or cameo .....	L. Solomons .....	4, 381
Medal of Elias Howe, jr. ....	A. B. Stockwell .....	3, 835
Medicine-dropper .....	H. A. Tweed .....	4, 533
Mill, Spice .....	W. Haslum .....	3, 893
Mold-board .....	J. T. Wilson .....	4, 197
Mowing-machine, Frame for .....	W. G. Kenyon .....	4, 220
Muff .....	R. M. Seldis .....	3, 946
Muff .....	J. Simonet .....	4, 019
Muff .....	J. H. Kappelhoff and S. Rauh .....	4, 254
N.		
Neck yoke and slide .....	R. L. Beat .....	4, 286
Needle-case .....	J. Semel6 .....	4, 064
Needle-case .....	J. Semel6 .....	4, 065
O.		
Oil-cloth, Floor .....	J. T. Webster and A. T. Powers .....	4, 344
Oil-cloth pattern .....	W. H. Townsend .....	3, 970
Oil-cloth pattern .....	W. H. Townsend .....	3, 998
Oil-cloth pattern .....	L. F. Dandre .....	4, 399
Oil-cloth pattern .....	J. Hutchison .....	4, 403
Oil-cloth pattern .....	H. Kagy .....	4, 404
Oil-cloth pattern .....	H. Kagy .....	4, 405
Oil-cloth pattern .....	H. Kagy .....	4, 406
Oil-cloth pattern .....	J. Paterson .....	4, 415
Oil-cloth pattern .....	J. Paterson .....	4, 416
Oil-cloth pattern .....	H. Kagy .....	4, 538
Oil-cloth pattern .....	H. Kagy .....	4, 539
Oil-cloth pattern .....	J. T. Webster .....	4, 544
Oil-cloth pattern .....	J. T. Webster .....	4, 545
Oil-cloth pattern, Floor .....	C. T. Meyer .....	4, 409
Oil-cloth pattern, Floor .....	C. T. Meyer .....	4, 410

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Organ .....	E. Hamlin .....	4, 161
Organ or melodeon case .....	G. Cook .....	3, 818
P.		
Package .....	G. Pustkuchen .....	4, 042
Pail, Ash .....	J. Merry .....	4, 304
Pair of gate-hinges .....	B. Roux .....	3, 844
Paper-box .....	G. K. Snow .....	3, 919
Paper-box .....	J. C. Bauer .....	4, 174
Paper-cuffs, Box for putting up .....	G. Faul .....	4, 471
Pattern or chart for applying measurements and laying out dress-waists .....	W. and E. Cornwell .....	3, 898
Persian cloak .....	T. Dolan .....	4, 300
Persian cloak .....	T. Dolan .....	4, 301
Piano .....	Olo Bull .....	4, 468
Piano-case .....	G. H. Davis .....	3, 856
Picture-frame .....	E. W. Haven .....	4, 199
Picture-frame .....	J. H. Bellamy .....	4, 248
Picture-frame .....	J. H. Saunders .....	4, 462
Plate and door of a cooking-stove .....	I. A. Sheppard .....	4, 319
Plate for pitcher-stand .....	H. O. Fritsch .....	4, 385
Plates and feet of the Dexter cooking-stove .....	J. Martino and J. Currie .....	4, 167
Plow-share .....	R. H. Taylor .....	4, 521
Post, Step and hitching .....	M. Dyer .....	4, 057
Presses, Cider, wine, or other .....	H. Thomas .....	4, 147
Pressure-gauge case .....	E. A. Wood .....	3, 868
Punch-drawer .....	A. H. Rowe .....	4, 373
R.		
Rack, Baggage .....	R. M. Snodgrass .....	3, 910
Radiator, Steam .....	W. Burdon .....	4, 024
Railing, Iron .....	E. Omensetter .....	4, 189
Railing, Iron .....	E. Omensetter .....	4, 190
Railing, Iron .....	E. Omensetter .....	4, 191
Railing, Iron .....	E. Omensetter .....	4, 192
Railing, Iron .....	E. Omensetter .....	4, 193
Railing, Iron .....	E. Omensetter .....	4, 194
Railing, Iron .....	E. Omensetter .....	4, 195
Railing, Iron .....	E. Omensetter .....	4, 196
Range, Portable .....	D. Stuart and L. Bridge .....	4, 320
Range or stove .....	N. S. Vedder and T. S. Heister .....	4, 464
Refrigerator and water-cooler .....	C. C. Savary .....	4, 274
Ring and buckle .....	J. E. Strode .....	4, 173
Rose, Door-knob .....	L. Kreuzinger .....	4, 101
Rose, Door-knob .....	L. Kreuzinger .....	4, 102
Rose, Door-knob .....	L. Kreuzinger .....	4, 103
Rose, Door-knob .....	J. A. Ruff .....	4, 119
Rubber-eraser .....	W. N. Bartholomew .....	3, 810
S.		
Saddletree .....	J. T. Million .....	4, 495
Sad-iron .....	W. M. Griscom .....	4, 475
Safe .....	W. McFarland .....	3, 814
Sash-fastener .....	W. Gorman .....	4, 160
Sash-holder .....	J. H. Martin .....	4, 185
Sash-lift .....	J. A. Ruff .....	4, 123
Sash-lock, Railway-car .....	W. H. Paige .....	4, 541
Sash or shutter lift .....	E. Parker .....	3, 833
Satchel-fastening .....	G. Sieben .....	3, 845
Sausage-filler .....	A. Shepard .....	4, 288
Saw .....	E. Rhodes .....	4, 255
Saw .....	E. Rhodes .....	4, 497
Saw, Cross-cut .....	W. G. Tuttle .....	4, 009
Saw-teeth, Shape of the slots between .....	E. Moore .....	3, 994
Scabbard .....	V. Price .....	3, 822
Screen for fire-place .....	J. R. Rose and E. Caley .....	4, 063
Scythe .....	C. P. Crossman .....	4, 505
Seal or banner .....	F. W. Bacon .....	4, 095
Seat and desk, School .....	C. G. Harrington .....	4, 076
Shade for gas-lights, &c. ....	F. Rodgers .....	3, 969
Shade for gas or lamp burners .....	J. Letchworth .....	3, 852
Shade for gas or lamp burners .....	J. Letchworth .....	3, 853
Shade for gas or lamp burners .....	B. Thackara .....	3, 878
Shade for gas or lamp burners .....	P. Lair .....	3, 968
Shade for gas or lamp burners .....	F. Rodgers .....	4, 018
Shade for gas or lamp burners .....	J. Letchworth .....	4, 295
Shape of a hood .....	M. Landenberger .....	4, 165
Shawl .....	M. Landenberger .....	4, 223
Shawl .....	M. Landenberger .....	4, 234

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Shawl.....	M. Landenberger.....	4, 235
Shawl-fabric, Woven.....	J. Hodgson.....	4, 526
Shawl-fabric, Woven.....	J. Hodgson.....	4, 527
Shawl-fabric, Woven.....	J. Hodgson.....	4, 528
Shawl-mantle.....	E. Flues.....	3, 937
Shawl-mantle.....	E. Flues.....	3, 988
Shawl-mantle.....	A. E. Taylor.....	3, 996
Shawl-mantle.....	A. E. Taylor.....	3, 997
Shears, Pruning.....	C. Condon.....	3, 950
Shears, Pruning.....	E. L. Nichols and F. A. Elder.....	3, 995
Shield, Transparent.....	I. C. Mayo.....	4, 153
Shirred goods.....	A. Hecht.....	4, 525
Shoe.....	G. H. Maynard.....	4, 424
Show-case.....	W. H. Reiff.....	4, 417
Show-case.....	W. H. Grove.....	4, 477
Show-case.....	R. J. Roberts.....	4, 514
Shutter-bar.....	J. Tiebout.....	3, 912
Slate-frame.....	J. M. Coffin.....	4, 215
Skating-cap, Knit.....	M. Landenberger.....	4, 221
Skewer-cushion.....	J. C. Wilson.....	3, 999
Soda-water fountain.....	A. J. Morse.....	3, 959
Spool for thread.....	H. Conant.....	3, 949
Spool-stand.....	R. G. Clemons.....	4, 149
Spool-stand.....	R. Gordon.....	4, 276
Spoon.....	B. Jerald.....	4, 096
Spoon and fork.....	G. Wilkinson.....	3, 922
Spoon and fork.....	G. Wilkinson.....	3, 924
Spoon and fork handle.....	B. D. Biederhase.....	4, 382
Spoon and fork handle.....	E. C. Moore.....	4, 476
Spoon-handle.....	G. Sharp.....	4, 066
Spoon-handle.....	R. Wallace.....	4, 155
Spoon and fork work, Fancy.....	G. Wilkinson.....	3, 923
Spoons, forks, ladles, &c., Handle of.....	G. W. Downing.....	4, 218
Sprig of artificial flowers.....	L. D. Newell.....	3, 960
Stair-rod.....	A. Pohl.....	3, 907
Statuary.....	A. Van Wart.....	4, 490
Statuette.....	N. Müller.....	4, 187
Statuette.....	A. Van Wart.....	4, 491
Statuette, Equestrian.....	N. Müller.....	3, 841
Statuettes, Pair of.....	N. Müller.....	4, 188
Stem for glassware.....	D. C. Ripley.....	3, 834
Step, Carriage.....	J. W. Curtis, F. A. Briggs, and M. O. Cox.....	4, 150
Stocking.....	T. Appleton.....	4, 389
Stool-pan and its cover.....	J. Clark.....	3, 827
Stove.....	S. S. Utter.....	4, 053
Stove.....	I. T. Montrose.....	4, 236
Stove.....	G. T. and W. A. Spicer and C. H. Peekham.....	4, 239
Stove.....	J. D. Flansburg.....	4, 400
Stove, Cook.....	H. H. Culver.....	4, 365
Stove, Cooking.....	D. Stuart and L. Bridge.....	3, 911
Stove, Cooking.....	J. B. Wiggenhorn.....	3, 921
Stove, Cooking.....	W. C. Davis.....	3, 951
Stove, Cooking.....	G. Smith and H. Brown.....	4, 171
Stove, Cooking.....	P. Low.....	4, 183
Stove, Cooking.....	W. Hailes.....	4, 433
Stove, Cooking.....	J. R. Rose and E. L. Calley.....	4, 515
Stove, Cooking.....	C. Harris and P. Zoiner.....	4, 349
Stove, cooking, Coal or wood.....	D. G. Littlefield.....	4, 062
Stove-door.....	M. C. Burleigh.....	4, 226
Stove door and panel.....	J. R. Rose and E. Calley.....	4, 425
Stove, Fire-place.....	G. Smith and H. Brown.....	4, 172
Stove, Heating.....	I. A. Sheppard.....	3, 945
Stove ornament.....	W. Hailes.....	4, 434
Stove, Parlor.....	N. S. Vedder.....	3, 859
Stove-plate.....	N. S. Vedder.....	3, 860
Stove-plate.....	N. S. Vedder.....	3, 861
Stove-plate.....	N. S. Vedder and T. S. Heister.....	3, 862
Stove-plate.....	N. S. Vedder and T. S. Heister.....	3, 863
Stove-plate.....	N. S. Vedder and T. S. Heister.....	3, 864
Stove-plate.....	N. S. Vedder and T. S. Heister.....	3, 865
Stove-plate.....	N. S. Vedder and T. S. Heister.....	3, 866
Stove-plate.....	N. S. Vedder and F. Ritchie.....	3, 867
Stove-plate.....	S. H. Ransom.....	4, 043
Stove-plate.....	S. H. Ransom.....	4, 044
Stove-plate.....	S. H. Ransom.....	4, 045
Stove-plate.....	S. H. Ransom.....	4, 046
Stove-plate.....	S. H. Ransom.....	4, 047
Stove-plate.....	S. H. Ransom.....	4, 048
Stove-plate.....	S. H. Ransom.....	4, 049
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 054
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 240
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 241

*Alphabetical list of designs—Continued.*

Invention or discovery.	Name of patentee.	No.
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 242
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 243
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 244
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 245
Stove-plate.....	N. S. Vedder, F. Ritchie, and T. S. Heister.....	4, 246
Stove-plate.....	G. W. Eddy.....	4, 347
Stove-plate.....	N. S. Vedder and T. S. Heister.....	4, 360
Stove-plate.....	N. S. Vedder and F. Ritchie.....	4, 374
Stove-plate.....	L. W. Harwood.....	4, 376
Stove-shelf.....	W. C. Davis.....	4, 469
Stud, Trace-supporting.....	J. Letchworth.....	4, 202
Sugar-tongs.....	R. Wallace.....	4, 069
Sugar-tongs.....	R. Wallace.....	4, 070
Sugar-tongs.....	R. Wallace.....	4, 071
Sugar-tongs.....	R. Wallace.....	4, 072
Sugar-tongs.....	R. Wallace.....	4, 073
Sugar-tongs.....	R. Wallace.....	4, 074
Sword guard.....	V. Price.....	4, 265
T.		
Tack-head.....	G. A. Field.....	3, 833
Tack-head.....	G. A. Field.....	3, 834
Tea and coffee service.....	E. G. Webster.....	4, 418
Tea or coffee pot.....	H. C. Wilson.....	4, 247
Tea-service.....	G. Gill.....	3, 872
Tea-service.....	W. Parkin.....	4, 211
Tea-set.....	H. Vasseur.....	3, 890
Tea-set.....	H. Vasseur.....	4, 441
Thermometer.....	C. R. Sherman and W. Macy.....	3, 999
Thumb-latch.....	F. Fogelstrand.....	4, 473
Thumb of glove.....	E. Hulbert, W. F. Steele, and H. C. Day.....	4, 143
Tie.....	W. H. Humphrey.....	4, 144
Tip of a sword-scabard.....	V. Price.....	4, 264
Toaster and broiler.....	P. B. Sheldon.....	4, 463
Tobacco-pipe.....	G. H. Pond.....	3, 961
Tongs, Fire.....	S. S. Green.....	4, 013
Top-plate combustion and air-chamber of a vapor generator and burner, Combined.....	J. Comly.....	4, 346
Top-plate for manglers.....	S. S. Bent.....	4, 275
Toy-block.....	J. A. H. Ellis.....	4, 058
Toy-carriage.....	F. W. Porter.....	4, 445
Toy, Figure of a mechanical.....	W. C. Goodwin.....	4, 368
Toy, Figure of a mechanical.....	W. C. Goodwin.....	4, 369
Toy, Figure of a mechanical.....	W. C. Goodwin.....	4, 370
Toy steam-engine.....	W. Holt.....	3, 849
Toy steam-engine.....	A. P. Tyler.....	4, 052
Trade-mark.....	R. and J. P. Kerr.....	3, 819
Trade-mark.....	O. C. Maxwell, T. L. Neal, and C. L. Long.....	3, 687
Trade-mark.....	G. C. Thilenius.....	3, 889
Trade-mark.....	W. Pearson.....	3, 906
Trade-mark.....	J. H. Gamhart.....	3, 943
Trade-mark.....	J. S. Kirk.....	3, 944
Trade-mark.....	D. A. Page.....	3, 984
Trade-mark.....	H. Kellogg.....	3, 993
Trade-mark.....	O. Kornemann and J. Jungbluth.....	4, 005
Trade-mark.....	R. W. Bell.....	4, 011
Trade-mark.....	P. Gibson and A. Tyler.....	4, 012
Trade-mark.....	W. J. Clark.....	4, 025
Trade-mark.....	G. W. and J. D. Langhorne and N. B. Johnston.....	4, 078
Trade-mark.....	G. W. and J. D. Langhorne and N. B. Johnston.....	4, 079
Trade-mark.....	S. P. M. Tasker.....	4, 154
Trade-mark.....	W. A. Burke.....	4, 156
Trade-mark.....	H. Fletcher.....	4, 178
Trade-mark.....	M. Landenberger.....	4, 182
Trade-mark.....	M. Landenberger.....	4, 186
Trade-mark.....	D. M. and J. J. Demarest and N. H. Joralemon.....	4, 216
Trade-mark.....	J. Adams.....	4, 257
Trade-mark.....	H. C. Rogers.....	4, 266
Trunk-lock.....	C. Walsh.....	4, 010
Tuck-comb.....	E. Brown.....	4, 523
Turret and rings for harness-saddle, Set of.....	H. Whitehouse.....	3, 920
Type.....	W. H. Page.....	3, 901
Type.....	W. H. Page.....	3, 902
Type.....	W. H. Page.....	3, 903
Type.....	W. H. Page.....	3, 904



*Alphabetical list of extensions.*

Invention or discovery.	Name of patentee.	No.
Type .....	W. H. Page .....	3, 905
Type .....	R. Smith .....	4, 008
Type .....	H. Ilenburg .....	4, 061
Type .....	A. Little .....	4, 203
Type .....	R. Smith .....	4, 213
Type .....	R. Smith .....	4, 267
Type .....	W. H. Page .....	4, 279
Type .....	W. H. Page .....	4, 280
Type .....	W. H. Page .....	4, 281
Type .....	W. H. Page .....	4, 282
Type .....	W. H. Page .....	4, 283
Type .....	R. Smith .....	4, 289
Type .....	R. Bruce .....	4, 392
Type .....	W. Bruce .....	4, 393
Type .....	J. Herriet .....	4, 401
Type .....	J. Herriet .....	4, 402
Type .....	J. K. Rogers .....	4, 529
Type .....	J. K. Rogers .....	4, 530
Type .....	C. Schranbstädter .....	4, 531
Type-border .....	W. H. Page .....	4, 284
Type-border .....	W. H. Page .....	4, 285
Type, Printers' .....	T. M. Cash .....	3, 811
Type, Printers' .....	H. Ilenburg .....	3, 813
Type, Printing .....	A. Little .....	4, 152
U.		
Umbrella-stand .....	C. Blake .....	3, 925
Umbrella-stand .....	J. C. Sidney .....	4, 080
Umbrella-stand .....	C. Blake .....	4, 447
W.		
Watches, Barrel-bridge, ratchet-cap base, and arbor-cap of .....	F. S. Giles .....	3, 886
Watches, Top-plate, barrel-bridge, and cock for .....	F. S. Giles .....	3, 885
Watch-chain .....	M. Buffum .....	3, 975
Watch-plate .....	F. A. Jones .....	4, 459
Water-cooler stand .....	C. C. Savery .....	4, 498
Well-casing .....	E. S. Cummins .....	4, 483
Wood, Joining .....	C. B. Knapp .....	4, 302
Wrench .....	A. Kindermann .....	3, 821

## EXTENSIONS.

A.		
Acid, sulphuric, Concentrating-apparatus for .....	W. T. Clough .....	15, 222
Ax-polls .....	D. P. Estep .....	15, 880
B.		
Bales of cotton and other fibrous materials, Non-elastic bands for .....	M. A. McComb .....	15, 142
Boilers, Culinary .....	E. Whiteley .....	14, 622
Bolts, Machine for heading .....	W. S. Booth .....	14, 086
Boot-trees .....	C. T. Eames .....	14, 951
Boxes, Making .....	A. French and C. Frost .....	15, 223
Brick-press, Hydraulic .....	E. Rogers .....	15, 778
Buckle for wearing apparel .....	E. Parker .....	15, 666
Buildings, Apparatus for heating, by steam .....	S. J. Gold .....	14, 158
C.		
Carding-engines, Machinery for cleaning top-flats of .....	H. Woodman .....	15, 313
Cartridge .....	E. Maynard .....	15, 141
Cast steel, Making .....	J. Neville .....	16, 214
Caustic alkali, Manufacture of .....	G. Thompson .....	15, 957
Caustic alkali, Putting up .....	G. Thompson .....	19, 957
Caustic alkalis, Manufacture of .....	G. Thompson .....	15, 951
Chairs and other articles, Elastic bottoms for .....	L. Spooner .....	15, 021
Clothes-drier .....	S. Morrill .....	16, 065
Cloth, gum-elastic, Making .....	H. G. Tyer and J. Helm .....	14, 814
Corn, Machine for husking .....	R. Bryson .....	16, 204
Coupling for vehicles .....	H. Miner, H. M. Stevens, and M. Saunders .....	14, 985

*Alphabetical list of extensions—Continued.*

Invention or discovery.	Name of patentee.	No.
<b>E.</b>		
Edge-keys .....	G. C. Todd .....	16, 123
Excavating-scoops .....	J. Taggart .....	14, 933
<b>F.</b>		
Fertilizers, Machine for sowing .....	W. S. Bartle .....	14, 708
Fibrous substances for spinning, Machinery for preparing .....	J. Appely and W. Clissold .....	18, 888
Fire-arms, Breech-loading .....	W. M. Storm .....	15, 307
Fluids, Bottling, under gaseous pressure .....	J. Quantin and H. A. Pintard .....	14, 368
<b>G.</b>		
Grain-separator .....	C. Roberts and J. Cox .....	14, 517
<b>H.</b>		
Harvesting-machine .....	W. N. Whiteley .....	16, 131
Harvesting-machine .....	W. N. Whiteley .....	16, 131
Harvester rakes .....	O. Dorsey .....	14, 350
Hay-rake, Horse .....	M. G. Pratt .....	(Reissue 1,893) .. 40, 067
Hay-rake, Horse .....	M. G. Pratt .....	(Reissue 1,894) .. 40, 067
Hay-rake, Horse .....	M. G. Pratt .....	(Reissue 1,895) .. 40, 067
Hay-rakes, Horse .....	M. G. Pratt .....	40, 067
Hoops, Machine for notching .....	E. J. Lamson .....	15, 768
<b>I.</b>		
Ice, Process and apparatus for making .....	A. C. Twining .....	10, 221
Inking rollers, pads, &c., Composition for .....	L. Francis and C. H. Loutrel .....	43, 192
Iron, Furnace for smelting .....	T. H. Powers .....	14, 827
Iron, Machines for forging .....	S. S. Putnam .....	16, 126
<b>J.</b>		
Jack, Pegging .....	A. Bailey .....	15, 406
<b>K.</b>		
Kettles, brass, Making .....	F. J. Seymour .....	14, 887
Kiln, Lime .....	L. Averill .....	15, 549
Knitting-machine, Rotary .....	S. W. Park and E. S. Ells .....	15, 492
<b>L.</b>		
Lathing surfaces, Continuous sheet-metal .....	J. B. Cornell .....	14, 854
Legs, artificial, Construction .....	W. Selpho .....	14, 836
Lightning-rods .....	D. Munson .....	15, 491
Loaf-sugar, Machine for cutting .....	A. and F. Brown .....	14, 490
<b>M.</b>		
Melodeon .....	E. D. Louis .....	16, 094
Mill, Cider .....	T. J. Kindleberger .....	12, 958
<b>N.</b>		
Nail-machines .....	D. Dodge .....	15, 054
<b>O.</b>		
Ore-washer .....	W. L. Carter .....	14, 388
Ore-washer .....	H. Bradford .....	15, 544
Ore-washer .....	S. Thomas .....	15, 827
Oven .....	H. Ball .....	15, 753
<b>P.</b>		
Pads, Attaching, to saddle-trees .....	J. Ives .....	15, 077
Paper-folding machine .....	C. Chambers .....	15, 842
Paper, Machinery for folding .....	C. O. Crosby .....	16, 266
Paper-pulp engine .....	J. Kingsland, jr .....	16, 278
Paper-pulp, Machinery for grinding .....	J. Kingsland, jr .....	16, 239
Paper-pulp, Process of grinding .....	J. Kingsland, jr .....	16, 316
Paper-pulp, Reducing wood fibers to .....	H. Voelter .....	21, 161
Photographic cameras, Plate-holder for .....	W. and W. H. Lewis .....	15, 854
Planing-machine, Gearing for feed-rollers of .....	C. Burleigh .....	14, 260
Planing-machines, Clamping cutters in the cutter-heads of .....	J. P. Grosvenor .....	16, 144

*Alphabetical list of reissues.*

Invention or discovery.	Name of patentee.	No.
Planter, Cotton-seed .....	A. W. Washburn.....	14, 529
Planter, seed, Hand .....	J. H. Jones .....	15, 610
Plow .....	B. F. Avery .....	14, 044
Press, Printing .....	R. M. Hoe .....	15, 501
Pressure-bells .....	M. L. Barton and C. A. Bucl.....	14, 593
Printers' composing-stick.....	O. F. Grover .....	15, 258
Printing-telegraph.....	H. N. Baker .....	14, 759
Pulverulent acid for use in the preparation of soda-powders, farinaceous food, &c.	E. N. Horsford .....	14, 722
<b>R.</b>		
Railroad-car seats and couches.....	T. T. Woodruff..... (Reissue 1,429) ..	16, 159
Railroad-car seats and couches.....	T. T. Woodruff.....	16, 160
Railway-bars, Repairing .....	G. Johnson .....	15, 687
Reaping-machines .....	W. C. Martin and H. F. Mann .....	15, 044
Registers and ventilators .....	E. A. Tuttle .....	15, 093
<b>S.</b>		
Saddle-trees, Attaching pads to .....	J. Ives .....	15, 077
Saw-gummer .....	R. H. Garrigues .....	15, 718
Saw-mill dogs .....	G. W. Hill .....	14, 844
Saw-mills, Head and tail blocks for.....	E. H. Stearns .....	14, 700
Saws, circular, Grinding .....	W. Clemson .....	14, 950
Saws, Machine for grinding .....	E. Andrews .....	16, 233
Sewing-machine .....	J. Bachelder .....	6, 439
Sewing-machine .....	J. Bachelder .....	6, 439
Sewing-machines, Folding-guides for.....	S. D. Boyes .....	15, 402
Shingle-machine .....	E. Hedley .....	14, 914
Shirt-collars .....	P. and G. W. Hunt .....	4, 376
Shirt-collars .....	P. and G. W. Hunt .....	10, 019
Shoemakers' edge-plane.....	I. A. Dunham .....	15, 176
Smut-machine .....	H. B. Ingham .....	15, 978
Spools, Machine for manufacturing .....	A. D. Waymoth .....	15, 446
Steam-stamps, Operating .....	E. P. Ball .....	14, 944
Stoves, cooking, Gas .....	H. B. Musgrove .....	14, 064
Stoves, Ventilating-dampers for .....	J. Magce .....	14, 940
Surface-condensers for steam-engines.....	D. D. Foley .....	14, 923
<b>T.</b>		
Tubes, metal, seamless, Making .....	W. F. Brooks .....	14, 551
<b>U.</b>		
Upholstery, Mode of securing springs in .....	W. Wright .....	16, 254
<b>V.</b>		
Valve-gear for steam-engines .....	C. H. Brown and C. Burleigh.....	14, 125
Vise .....	C. C. Walworth .....	15, 862
<b>W.</b>		
Walls and floors of cellars, Constructing .....	S. A. and P. L. Morn.....	14, 323
Warehouses, Safety-hatches for .....	E. P. Morgan .....	15, 201
Water-closet .....	W. S. Carr .....	15, 474
Wheel, Water .....	J. Tyler .....	15, 309
Wool, Machinery for combing.....	M. H. Simpson .....	16, 864
Wood-bending machines.....	J. C. Morris .....	14, 405
Wrench .....	W. Baxter .....	14, 221

## REISSUES.

<b>A.</b>		
Air and gas, Apparatus for carbureting .....	A. Barbarin .....	3, 892
Air, Treating organic materials with .....	R. D. Heurouse .....	3, 921
Alarm for railroad switches, Electro-magnetic .....	Hall's Patent Electric Railway Switch and Drawbridge Signal Company.	3, 859
Ale, beer, &c., Brewing .....	J. McCormick .....	3, 804
Animal and vegetable substances, Apparatus for evaporating the moisture from. (Division A.)	C. Alden and Alden Fruit-Preserving Company.	4, 010
Animal and vegetable substances, Process for evaporating the moisture from. (Division B.)	C. Alden and Alden Fruit-Preserving Company.	4, 011
Apple-parer .....	A. G. Batchelder .....	3, 970
Apples, grapes, &c., Machine for grinding and pressing.	C. B. Hutchinson .....	3, 830
Auger .....	I. T. Payne .....	3, 879
Auger .....	W. A. Ives .....	4, 156

*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
Auger-handle .....	J. M. Horton .....	4, 187
Axle-box, Railway .....	J. B. Fletcher .....	3, 963
Axle, Carriage .....	A. E. Smith .....	3, 991
B.		
Bagasse, Spider-arch for burning .....	J. Amieh .....	4, 044
Bar-iron, Manufacture of .....	W. H. Perry .....	3, 787
Bearings and packings, Material for .....	E. D. Murfey .....	4, 210
Bed-bottom .....	E. Yeoman .....	4, 189
Bedstead-fastening .....	J. L. Haven & Co .....	4, 038
Bit-stock .....	L. J. Gunn and C. H. Amidon .....	4, 199
Blast-furnaces, &c., Hot-blast stove for .....	J. Henderson and J. M. Lawford .....	4, 149
Boat for transporting railroad-cars .....	J. Wheelock .....	4, 121
Boiler, Farmers' .....	A. N. Merrill .....	4, 062
Boiler-heads, Device for flanging the flue-hole of .....	E. Regan .....	3, 966
Boiler, Steam .....	H. Leslie .....	3, 904
Boilers, Water-indicator for .....	J. D. Lynde .....	4, 049
Bone-black and other substances, Furnace for burning .....	A. Weber .....	4, 201
Boots and shoes, Insole for .....	W. Williams .....	3, 944
Bottles, Apparatus for filling .....	H. W. Putnam .....	4, 050
Box for packing neck-ties .....	W. H. Hart, jr .....	4, 163
Bracket, plated-metal, Manufacture of .....	J. Barclay .....	4, 192
Brake, Railway-car .....	A. M. Allen .....	3, 790
Branch stop-cock for mains .....	R. A. Hill .....	3, 829
Brick-machine .....	United States Brick Machine Company .....	4, 108
Brick-machine .....	J. Sangster .....	4, 178
Brick-machine .....	J. Sangster .....	4, 179
Bridge .....	A. Fink .....	4, 033
Bridge, iron, Corrugated .....	R. Montgomery .....	4, 172
Broiler .....	J. T. Page .....	4, 218
Bronzing and gilding .....	J. L. Puffee and J. H. Johnson .....	3, 962
Brush .....	J. McQuide .....	4, 151
Buckle .....	West Haven Buckle Company .....	3, 868
Buggy-top .....	A. M. Cory .....	4, 104
Burner, Lamp .....	W. F. Rippon and G. A. Johnson .....	3, 805
Burner, Lamp .....	A. Burtis, M. A. Van Allen, and W. D. Ludlow .....	4, 058
Butter-worker .....	E. P. Walker .....	3, 943
C.		
Calico-printers' rollers, Machine for engraving .....	J. and T. Hope and H. Le Favour .....	3, 849
Camera, Solar .....	W. H. Masters .....	4, 136
Can-bottom, Metallic .....	H. W. Shepard .....	4, 032
Can for paint, fruit, &c .....	Devoe Manufacturing Company .....	3, 993
Capstan and windlasses .....	D. N. B. Coffin, jr., and B. Woodward .....	4, 100
Carpet-lining .....	G. W. Chipman .....	4, 066
Carriages, Children's .....	B. P., W. E., and C. T. Crandall .....	3, 971
Carriages, Children's .....	W. E. Crandall .....	3, 972
Carriages, Rein-holder for .....	E. C. Patterson .....	4, 133
Carriage-wheels, Machine for compressing .....	H. Killam .....	4, 070
Cast steel, Manufacture of .....	W. W. Averell .....	3, 835
Cast steel, Manufacture of .....	L. La Breeh-Viger .....	4, 153
Cartridge, Metallic .....	R. White .....	3, 833
Cartridge-shells, Machine for necking .....	B. Payne .....	3, 793
Cement water-pipe .....	E. Dayton .....	3, 824
Chain-links, Device for swaging .....	O. M. Draper .....	3, 858
Chair, Folding .....	E. W. Vaill .....	3, 986
Cherry-stoner .....	G. Geer, T. G. Hadley, and W. Hamilton .....	4, 165
Chills for casting ear-wheels .....	W. Wilmington .....	4, 102
Clock, Calendar .....	W. A. Terry .....	4, 213
Clock case .....	E. Ingraham .....	4, 207
Coal-hod .....	E. A. Jeffery .....	4, 147
Coal-scuttle .....	J. Edgar .....	3, 902
Cock .....	J. P. Gallagher .....	4, 140
Cock, Steam-gauge .....	O. T. Earle .....	4, 027
Coffee-strainer .....	E. P. Woods, D. Sherwood, and C. H. Latham .....	3, 908
Condenser, Steam .....	J. Houpt .....	3, 999
Cornices, Machine for rolling .....	A. and W. H. Johnson .....	4, 171
Corn, Machine for husking .....	L. A. Aspinwall .....	4, 099
Corn, Machine for husking .....	L. A. Aspinwall .....	4, 174
Corn-popper .....	J. H. Bigelow .....	3, 821
Corn-sheller .....	J. Bowles and S. P. Ross .....	4, 036
Cotton-gin .....	J. C. Du Bois .....	4, 047
Coupling-car .....	M. Van Slyke and D. W. Wood .....	4, 073
Covering steam-boilers and other similar articles, Composition for .....	F. Leroy and P. A. V. Le Lubez .....	4, 095
Crimping-machine .....	F. B. Cabell .....	3, 856

*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
Cultivator .....	J. Gerber .....	3,932
Cultivator .....	A. R. Blood and V. R. Beach .....	3,945
Cup for casters, &c. .... (Division B) ..	C. H. Latham .....	4,209
Cutter, Corn-stalk .....	G. W. Cole .....	3,874
Cutter, Straw .....	J. Palmer .....	3,893
Cutter, Straw .....	W. Gale and B. Belcher .....	3,912
Cutter, Twine .....	T. B. Doolittle .....	4,003
D.		
Damper, Stove-pipe .....	G. B. Halstead .....	4,183
Dentists' tool-rack .....		
Deodorizing-apparatus for closet .... (Division A) ..	Earth Closet Company, Hartford, Conn. ....	4,137
Desk, School .....	C. H. Loomis .....	4,190
Drill, Grain .....	J. H. Thomas, P. P. Mast, and C. O. Gardiner. ....	4,091
Drills, Grain .....	J. Ingels .....	3,976
E.		
Earth-closet .....	Earth Closet Company, Hartford, Conn. ....	4,138
Excavating-machine .....	O. S. Chapman .....	4,038
Excavating-machine .....	O. S. Chapman .....	4,039
F.		
Fabric for the manufacture of shoes, &c. ....	E. Waite .....	4,173
Fastening for neck-tie .....	D. H. Tierney .....	4,033
Fatty substances, Process of extracting .....	W. Coffin .....	4,067
Faucet .....	E. A. Sterry .....	4,022
Faucet .....	W. H. Trissler .....	4,054
Felting-machine .....	J. T. Waring .....	3,916
Fence, Farm .....	C. W. Reeder .....	3,980
Fertilizer .....	D. A. Ter Hoeven .....	4,052
Fertilizers, Manufacture of .....	D. A. Ter Hoeven .....	4,053
Fertilizers or guano from fish, Manufacture of .....	O. Lugo .....	3,840
Fire-alarm signal and apparatus .... (Division A) ..	A. Allen .....	4,012
Fire-alarm signal and apparatus .... (Division B) ..	A. Allen .....	4,013
Fire-arm, Breech-loading .....	W. C. Hicks .....	3,798
Fire-arm, Breech-loading .....	W. C. Hicks .....	3,860
Fire-arm, Breech-loading .....	B. S. Roberts .....	3,951
Fire-arm, Breech-loading .... (Division 2) ..	B. S. Roberts .....	3,952
Fire-arm, Breech-loading .....	B. S. Roberts .....	3,953
Fire-arms, Breech-loading .....	W. N. Ely .....	3,946
Fire-extinguisher for use on railroads, &c. ....	W. P. Van Deursen and W. C. Davis ..	3,997
Fluting-machine .....	S. R. Knox .....	3,861
Fluting-machine .....	S. R. Knox .....	3,938
Forging-apparatus, Portable .....	A. Thomas .....	3,894
Fruit-basket .....	L. Carpenter .....	4,145
Furnace for burning bone-black and other substances. ....	A. Weber .....	4,201
Furnace for roasting and treating ores, (Div. A) ..	C. Stetefeldt .....	3,807
Furnace for roasting ores .....	E. P. Hudson .....	4,132
Furniture, Stationary .....	C. H. Wight .....	4,034
G.		
Gas, Apparatus for the manufacture of .....	W. J. Nichols and A. C. Rand .....	3,872
Gas from hydrocarbons, Manufacture of .....	J. Kidd .....	4,168
Gas, Manufacture of .....	W. J. Nichols and A. C. Rand .....	3,873
Generator, Gas .....	B. Best .....	3,924
Generator, gas, Steam .....	H. S. Maxim .....	3,950
Generator, Steam .....	H. L. Stuart .....	3,809
Generator, Steam .....	W. P. Abendroth, J. Griffith, J. W. Wundrum, and T. H. Miller. ....	3,853
Generator, Steam .....	W. Lowe .....	4,000
Generator, Steam .... (Division A) ..	J. B. Root and T. C. N. Paton .....	4,082
Generator, Steam .... (Division B) ..	J. B. Root and T. C. N. Paton .....	4,083
Generator, Steam .... (Division B) ..	American Generator Boiler Company, New York, N. Y. ....	4,186
Glue, Manufacture of .....	A. Guenther and E. H. Neymann .....	3,884
Glue, Manufacture of .....	T. P. Milligan and T. Higgins .....	4,072
Gold and silver from waste solutions, Recovering .....	J. Shaw .....	4,030
Grain and other materials, Machine for separating .....	W. W. Stoll .....	3,992
Grain-cleaner .....	W. Ager .....	3,788
Grain-cleaner .... (Division A) ..	W. Ager .....	3,789
Grain-cleaner .... (Division B) ..	G. B. Turner .....	3,923
Grain-separator .....	J. Old .....	4,042
Grate .....	E. S. Renwick .....	3,967
Grate for furnaces .....	E. Monense and L. Duparquet .....	3,800
Grate, Stove .....	J. W. Wilson .....	4,154
Gun-carriage .....		

*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
<b>H.</b>		
Hair for ladies' head-dress, Imitation .....	L. F. Shaw .....	4, 031
Hand-canceling stamp .....	M. P. Norton .....	4, 144
Hand-stamp .....	B. B. Hill .....	3, 927
Hard rubber, Manufacture of new articles from .....	Halsey's Patent Box and Case Com- pany. ....	3, 974
Hard rubber, Molding watch-cases and other articles from. ....	Halsey's Patent Box and Case Com- pany. ....	3, 973
Harvester .....	J. F. Sieberling .....	3, 955
Harvester .....	J. F. Sieberling .....	3, 956
Harvester .....	J. F. Sieberling .....	3, 957
Harvester .....	R. M. Williams .....	3, 958
Harvester .....	R. Dutton .....	4, 124
Harvester .....	R. Dutton .....	4, 125
Harvester .....	R. Dutton .....	4, 139
Harvester .....	R. Dutton .....	4, 217
Harvester .....	J. G. Perry .....	4, 008
Harvester, Combined rake and reel for .....	C. H. and L. J. McCormick .....	3, 979
Harvester, Pitman-connection for .....	J. W. Doty .....	4, 017
Harvesters .....	C. H. and L. J. McCormick .....	3, 977
Hasp for trunk-lock .....	S. Croft and J. C. Schnellermann .....	4, 170
Hasp for trunk-locks .....	L. Hillebrand .....	4, 205
Hat .....	J. P. Beatty .....	3, 855
Hay-fork, Horse .....	J. K. O. Neil .....	3, 876
Hay-rake, Horse .....	W. Emmons .....	3, 937
Hay-rake, Horso .....	A. Brown .....	3, 960
Hay-rake, Horso .....	J. H. Sherman .....	4, 198
Heaters and filters, Feed-water .....	J. Armstrong .....	3, 834
Heater, Steam .....	J. Shackleton .....	3, 843
Heater, Steam .....	J. Shackleton .....	3, 844
Heater, Steam .....	J. Shackleton .....	3, 845
Hides and skins, Compound for treating .....	L. F. Robertson .....	3, 864
Hides, Apparatus for scraping and working .....	H. Lampert .....	3, 839
Hinge .....	P. and F. Corbin .....	3, 803
Hoisting-apparatus .....	Warrior Mowing Company .....	3, 811
Hoisting-block .....	J. A. Burr .....	4, 215
Hoisting-machine .....	W. Miller .....	3, 922
Holder for neck-ties .....	W. H. Hart, jr. ....	4, 162
Horse-cover, Ventilated .....	P. B. Eager .....	3, 926
Horses and other animals, Device for shearing and clip- ping. ....	R. T. Smith, W. Earl, J. K. Priest, and J. G. Blunt. ....	4, 021
Horseshoe .....	G. T. Chapman .....	3, 822
Hose, tubing, and other rubber fabrics, Manufacture of .....	J. Schenck .....	3, 842
Hullers, Cotton-seed .....	P. P. J. Martin .....	3, 831
Hydrant .....	W. Bailey .....	4, 155
Hydrocarbons, Manufacture of gas from .....	J. Kidd .....	4, 168
<b>I.</b>		
Ice-cream freezer .....	B. G. Martin .....	4, 177
Indicator, Railroad-station .....	A. C. Rodgers and L. Shaffer .....	3, 841
Inking-apparatus for printing-presses .....	V. Wood and J. E. Suiterlin .....	3, 896
Inkstand .....	S. Darling .....	4, 197
Inkstand, Manufacture of .....	T. S. Hudson .....	3, 964
Insulator .....	L. A. Cauvet .....	3, 847
Iron and steel, Coating .....	S. B. Hewitt, jr., and L. P. Jones .....	3, 989
Iron, Apparatus for heating the blast for furnaces used in smelting. ....	J. Henderson and J. M. Lawford .....	4, 150
Iron into steel, Converting .....	The Barrons Patent Steel Manufactur- ing Company. ....	3, 920
Iron exposed to water or dampness, Preventing the corrosion of. ....	C. Godfrey and R. Lighthall .....	4, 048
<b>J.</b>		
Jar, Fruit .....	T. G. Otterson .....	4, 211
<b>K.</b>		
Kettle, Brass .....	Waterbury Brass Company .....	3, 996
Kettles, Machine for making .....	Waterbury Brass Company .....	3, 995
Kiln, Limo. ....	C. D. Page .....	3, 877
Knife, Paring .....	J. J. Le Beau .....	4, 112
Knitting-machine .....	Pepper Knitting-Machine Company .....	3, 901
Knob, Curtain .....	C. Z. Krol .....	4, 019
Knob-latch, Reversible .....	Norwalk Lock Company .....	3, 909
Knob-latch, Reversible .....	Russell & Erwin Manufacturing Com- pany. ....	3, 990
Knob-latch, Reversible .....	H. H. Elwell .....	4, 126
Knobs to spindles, Attaching .....	M. Andrew .....	4, 114



*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
<b>L.</b>		
Ladder, Step .....	C. G. Udell .....	3, 895
Ladies' head-dress, Imitation hair for .....	L. F. Shaw .....	4, 051
Lamp .....	C. A. Kleemann .....	3, 900
Lamp-chimney .....	E. and E. D. Dithridge .....	4, 182
Lamp-chimney .....	Requa Patent Concave Burner and Chimney Company .....	4, 221
Latch, Reversible .....	B. Mallory .....	3, 862
Leather, Machine for cutting .....	C. F. Davis, T. Corey, and S. and R. Boyd .....	3, 987
Leather, Machine for rolling .....	J. Whitney .....	4, 122
Leather, Tanning and stuffing .....	W. B. Brittingham .....	4, 123
Leather, Treatment of .....	N. C. Russell .....	3, 816
Lining for fire-place .....	C. Truesdale and W. Resor & Co .....	4, 024
Lock .....	Hall's Safe and Lock Company .....	4, 018
Lubricator .....	H. A. Daniels .....	4, 131
<b>M.</b>		
Marble, Machine for dressing .....	R. P. Bailey .....	4, 057
Marble, Machine for sawing .....	P. J. Torney, C. W. Hayden, and J. L. Kidwell .....	3, 931
Marker, planter, and cultivator, Corn .....	E. Barto .....	4, 046
Mattress, Spring .....	E. L. Bushnell .....	4, 103
Metal bolts, Machine for forging or rolling screw-threads on .....	J. Cochrane .....	3, 998
Meter .....	J. C. Horton and S. K. Hawkins .....	4, 206
Meter, Liquid .....	J. F. De Navarro .....	4, 040
Mill .....	J. B. Brown .....	3, 925
Mill .....	J. B. Brown .....	3, 926
Mill, Cider .....	J. S. and A. W. Hall, J. A. Moore, and H. Burkhardt .....	3, 751
Mill, Coffee .....	T. W. Brown .....	4, 130
Mill, Saw .....	A. P. Barlow, C. H. Eastman, W. W. King, Z. B. Small, and J. H. Johnson .....	3, 878
Mill, Saw .....	A. McCreight .....	4, 101
Millstone-dress .....	J. Sedgbeer .....	4, 135
Mill, Wind .....	United States Wind Engine and Pump Company .....	4, 064
Movement, Mechanical .....	H. J. Case, N. Chapin, and C. Richardson .....	4, 078
Mower, Lawn .....	S. Coit .....	3, 784
Mowing-machine .....	J. P. Greely and L. W. Buxton .....	3, 947
Mowing-machines, Gearing for .....	J. V. Strait .....	4, 200
<b>N.</b>		
Nails, Machine for cutting .....	A. P. Winslow .....	4, 214
Nails, wrought-iron, Machine for making .....	D. Armstrong .....	3, 969
Neck-ties, Box for packing .....	W. H. Hart, jr .....	4, 163
Neck-ties, Holder for .....	W. H. Hart, jr .....	4, 162
Needles, Machine for making .....	C. O. Crosby .....	3, 911
<b>O.</b>		
Ochres for paints .....	D. S. Wood .....	4, 159
Oil-cabinet .....	M. H. Wiley, T. Miller, and J. H. B. Lang .....	4, 035
Oiler for loose pulleys .....	C. A. King and D. B. Wesson .....	3, 928
Oil-fountain, Drip-filtering .....	E. F. Wilder .....	4, 176
Ore-crusher .....	J. G. W. and J. Hamilton .....	3, 948
Ores, Furnace for roasting .....	E. P. Hudson .....	4, 132
Ornamenting, Mode of .....	H. Harrop .....	3, 903
Oven .....	J. Vale .....	3, 796
Oven .....	H. Ball .....	4, 026
Oven .....	J. Vale .....	4, 055
Oven .....	J. Vale .....	4, 056
Oven, Bakers' .....	M. A. E. McKenzie .....	3, 929
<b>P.</b>		
Packing-case for tobacco .....	S. F. Hess .....	3, 871
Padlock .....	F. W. Smith, jr., G. W. Bassell, and S. R. Wilmot .....	3, 880
Paint and cement, Fire and water proof .....	T. Brinkmann .....	3, 881
Paper and other fabrics and materials, Compound for coloring .....	F. Beck .....	4, 181
Paper-bags, Tool for manufacturing .....	E. J. Howlett .....	4, 029
Paper-boxes, Machine for making .....	S. B. Terry, jr., and D. S. Robeson .....	3, 925
Paper-cutting machine .....	G. H. Sanborn .....	4, 030
Paper-folding machine .....	S. C. Forsaith .....	3, 785
Paper-folding machine .....	C. Chambers, jr .....	4, 079

*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
Paper, Manufacture of .....	Okra Paper Company, New York .....	3, 907
Paper-pulp from straw, &c., Manufacture of .....	A. K. Eaton .....	4, 213
Pavement, Composition .....	H. L. Crauford .....	4, 059
Pavement, Stone .....	C. Guidet .....	4, 106
Pencil .....	J. Reckendorfer .....	3, 863
Petroleum, Deodorizing .....	T. Restieaux .....	4, 020
Petroleum, Process of treating .....	J. A. Tatro .....	3, 867
Piston, Pump .....	New England Pump-Manufacturing Company, Boston; Pacific Pump- Manufacturing Company, San Fran- cisco; C. F. Mudge, and Bridgeport Manufacturing Company. ....	3, 899
Piston-rod adjuster .....	D. Ely .....	4, 015
Planing-machine .....	S. L. Allen .....	4, 092
Planter, Corn .....	J. and W. Campbell .....	3, 836
Plow .....	J. Vandegrift .....	4, 119
Plow, Gang .....	G. W. Hildreth .....	4, 222
Polishing-machine .....	P. F. Randolph .....	4, 127
Post-office post marking and canceling hand-stamp. (Division A.) .....	N. P. Norton .....	4, 143
Press, Printing .....	R. Hoe & Co .....	3, 893
Press, Printing .....	R. Hoe & Co .....	4, 084
Priming-cartridge .....	A. Moffatt .....	4, 075
Priming-cartridge .....	A. Moffatt .....	4, 076
Printing-presses, Combining paper-folding machines with, (Div. B.) .....	S. C. Forsaith .....	3, 786
Printing-telegraph .....	Gold and Stock Telegraph Company, New York. ....	3, 810
Printing-telegraph .....	Gold and Stock Telegraph Company, New York. ....	3, 812
Printing-telegraph .....	Gold and Stock Telegraph Company, New York. ....	3, 820
Printing-telegraph .....	G. M. Phelps .....	4, 152
Projectile .....	J. D. Richards .....	3, 886
Pump .....	Forrester Manufacturing Company. ....	3, 888
Pump .....	J. Brokenshire, G. Goble, and J. D. Macfarlane. ....	4, 110
Pump .....	J. Brokenshire, G. Goble, and J. D. Macfarlane. ....	4, 111
Pump .....	C. L. and J. P. Griscom .....	4, 204
Pump, Pneumatic .....	W. H. Guild .....	3, 828
R.		
Rake and loader, Hay .....	H. Baker .....	3, 854
Rake, Harvester .....	A. Rank .....	4, 089
Rake, Harvester .....	H. H. Scofield .....	4, 194
Rakes, Harvester .....	C. H. and L. J. McCormick .....	3, 978
Reflector .....	W. G. Schmidlin and J. W. Driscoll .....	3, 981
Reflector .....	I. P. Frink .....	3, 826
Reflector .....	I. P. Frink .....	3, 827
Reflector for lamps .....	W. G. Schmidlin and J. W. Driscoll .....	3, 817
Rein holder for carriages .....	E. C. Patterson .....	4, 133
Reservoir for wells .....	R. H. Dewey and E. N. Tillotson .....	4, 165
Rhubarb-plant, Alcoholic liquor from .....	J. H. Deacon .....	3, 837
Roller for clothes-wringer .....	Woonsocket Rubber Company .....	3, 930
Roofing, Metallic .....	S. Hughes .....	4, 198
Rubber or gutta-percha hose, Manufacture of .....	E. L. Perry and C. Manheim .....	4, 148
S.		
Safe .....	T. J. Sullivan .....	3, 887
Safes, Construction of .....	F. H. Williams .....	4, 001
Sash-fastener .....	Judd Manufacturing Company .....	3, 915
Saw .....	J. and F. W. Davis .....	4, 068
Saw .....	E. P. Wheeler, E. M. Madden, and W. Clemson. ....	4, 096
Scale-beams, Machine for milling the knife-edges of. ....	T. J. Rockwood .....	3, 865
Scraping and working hides, Apparatus for .....	H. Lampert .....	3, 839
Screen for base-burning fire-place heater. (Division B.) ..	D. Stuart and R. Peterson .....	4, 059
Screw .....	National Screw Company .....	3, 941
Seat, Chair .....	G. C. Winchester .....	3, 890
Seat, Chair .....	O. A. Bingham .....	4, 164
Seeding-machine .....	W. A. Van Brunt .....	3, 846
Seeding-machine .....	F. H. Manny .....	3, 913
Settee .....	W. Chase .....	3, 882
Sewing and other machines, Motive power for .....	J. Zuckermann .....	4, 123
Sewing and other machines, Treadle for .....	B. C. Pole .....	4, 184
Sewing-machine .....	Wilcox & Gibbs Sewing-Machine Company. ....	3, 795
Sewing-machine .....	G. L. Dulaney .....	3, 825
Sewing-machine .....	Globe Sewing-Machine Company .....	3, 994
Sewing-machine cover, Construction of .....	J. Johnson .....	3, 961
Sewing-machine, Shuttle for .....	J. C. Wade .....	3, 935

*Alphabetical list of reissues—Continued.*

Invention or discovery.	Name of patentee.	No.
Sewing-machines, Needle for ..... (Division A)	H. G. Suplee .....	3, 818
Sewing-machines, Needle for ..... (Division B)	H. G. Suplee .....	3, 819
Sewing-machines, Needle for .....	M. P. Carpenter .....	4, 002
Sewing-machines, Tuck-creasing device for .....	J. Bolton .....	4, 196
Shears, Sheep .....	R. M. Wilder and H. B. Robinson .....	3, 889
Shoe .....	C. Buffum .....	4, 037
Shoes, &c., Fabric for the manufacture of .....	E. Waite .....	4, 173
Shoe, Water-proof .....	T. C. Wales .....	3, 942
Shovel-plow and potato-digger, Combined .....	J. M. Dick .....	4, 216
Side-saddle .....	J. T. Gathright .....	4, 041
Silver ores, Process of treating ..... (Division B)	C. Stetefeldt .....	3, 808
Skate .....	H. Scott .....	3, 806
Skate .....	J. L. Plimpton .....	3, 906
Skate-fastening .....	H. Scott .....	4, 191
Skates, Mode of fastening .....	N. Ladd .....	4, 088
Sleeping-collar .....	L. Dederick .....	4, 193
Sleeve button and stud .....	B. Clayton .....	4, 016
Sleigh-bells to straps, Attaching .....	W. E. Barton .....	4, 185
Slide-valves in direct-acting engines, Operating .....	W. H. Guild and W. F. Garrison .....	3, 885
Smut-mill and grain-separator .....	D. Shaw .....	3, 794
Soap, Apparatus for crutching .....	G. M. Leslie .....	4, 107
Spectacles .....	L. Black .....	4, 065
Spindle for spinning .....	A. H. Gilman .....	4, 094
Spoke-machine .....	R. H. Boynton .....	4, 109
Spring, Compensating ..... (Division B)	C. Shea .....	3, 983
Spring, Equilibrium ..... (Division A)	C. Shea .....	3, 982
Springs, Combined India rubber and steel .....	National Spring Company, New York .....	4, 202
Springs, Compensating or equilibrium ..... (Division C)	C. Shea .....	3, 984
Spring, Shank .....	E. Heaton .....	4, 081
Sprinkler, Street .....	L. F. Bancroft and A. B. Yetter .....	3, 917
Steam-boilers, steam-pipes, &c., Composition for covering .....	J. Riley and C. W. Bissell .....	4, 134
Steel, Manufacture of .....	W. Fields .....	4, 069
Stone-channeling machine .....	E. G. Lamson .....	4, 189
Stove, Base-burning .....	G. G. Hunt .....	3, 965
Stove, Coal .....	H. G. Giles .....	3, 897
Stove, Cooking .....	R. Scorer .....	3, 801
Stove, Cooking .....	E. Bussey and C. A. MacLeod .....	3, 815
Stove, Cooking .....	S. S. Jewett .....	4, 061
Stove, Cooking .....	G. H. Phillips .....	4, 063
Stove, Cooking .....	S. H. La Rue .....	4, 157
Stoves, cooking, Reservoir .....	G. H. Phillips .....	4, 219
Stoves, cooking, Water-reservoir for .....	C. O. Green .....	4, 161
Stoves, Covers for .....	D. G. Littlefield .....	4, 006
Stove for burning stumps .....	H. Willard .....	3, 968
Stove, Heating .....	J. M. French .....	4, 004
Stove, Heating .....	S. H. La Rue .....	4, 175
Stove-pipe elbows .....	C. Hoeller .....	3, 934
Stove-pipe thimble .....	T. K. Anderson .....	4, 098
Sugar, Purging and draining .....	W. H. Guild .....	3, 797
Surge-reliever .....	J. J. Emery .....	3, 838
T.		
Table-caster ..... (Division A)	C. H. Latham .....	4, 208
Table, Croquet .....	H. R. Heyl .....	4, 118
Table, Extension .....	C. P. Leuz .....	3, 949
Table-leaf supporter .....	G. L. Gerard .....	4, 146
Taps for oil-vessels .....	M. Andrew .....	4, 014
Telegraph, Printing .....	T. A. Edison .....	4, 166
Thrashing-machine .....	J. O. Ferrall and T. L. Daniels .....	4, 007
Tile-machine .....	F. M. Mattice .....	3, 851
Tile-machine .....	J. W. Penfield .....	3, 905
Tin, Method of ornamenting .....	L. Fitzmaier .....	4, 160
Tool for cutting screw-thread ..... (Division A)	National Screw Company .....	3, 940
Tool for manufacturing paper-bags .....	E. J. Howlett .....	4, 029
Toy, Teachers' .....	E. F. Anderson .....	3, 891
Toy velocipede .....	N. S. Warner .....	4, 120
Trace-holder .....	O. B. North & Co. ....	3, 914
Trap, Animal .....	J. A. Lee .....	4, 113
Traveling-bag .....	F. Fischbeck .....	4, 060
Treadle for sewing and other machines .....	B. C. Pole .....	4, 184
Tree for side-saddles .....	J. B. Gathright .....	3, 988
Treenail .....	N. L. Tomlinson .....	4, 195
Tumbler-washer .....	G. D. and C. Dows .....	3, 870
Turbine .....	B. Stetson .....	3, 866
U.		
Unloading apparatus, Wagon and car .....	N. Swickard .....	4, 212
Urinal .....	S. Males .....	3, 939
Use and application of fuel in metallurgic and other furnace.	T. W. Clarke and W. S. Dexter .....	3, 857

*Alphabetical list of trade-marks.*

Invention or discovery.	Name of patentee.	No.
<b>V.</b>		
Vacuum-apparatus, Medical .....	J. G. Hadfield .....	4, 080
Valve, slide, Balance .....	W. M. Stevenson .....	3, 802
Valve, slide, Balance .....	T. M. Herriott and S. Myers .....	4, 117
Valve, Globe-steam .....	Rock-Valve Manufacturing Company .....	4, 043
Valve-seat, Non-corrosive .....	E. H. Ashcroft .....	4, 045
Valve, Stop .....	J. H. Davis .....	3, 823
Varnish .....	D. R. Averill .....	3, 813
Varnish, Manufacture of .....	D. R. Averill .....	3, 814
Vegetable and fruit peeler .....	E. D. Averell and J. Malan .....	4, 025
Vehicles, Umbrella-supporter for .....	H. S. Hermance .....	3, 792
Veneers, Stay-log for cutting .....	J. N. Lyman .....	3, 799
Ventilator, Car .....	M. T. Hitchcock .....	4, 005
Ventilator, Railroad-car .....	H. D. Carroll, R. Hitchcock, and J. H. Hare .....	3, 910
Vessel for boiling .....	W. Krøger .....	4, 188
Vinegar-apparatus .....	A. B. Strong .....	4, 051
Vise .....	E. Crawley and T. L. Baylies .....	3, 883
<b>W.</b>		
Wagons .....	L. M. Ham and J. H. Dodge .....	3, 975
Wash-bench, Extension .....	S. Wiswall .....	4, 097
Washing-apparatus .....	J. T. Grose .....	4, 141
Watchmen's time-detector .....	J. E. Bexerk .....	3, 869
Water-pipe machine .....	J. W. Stockwell .....	4, 220
Water-supplying apparatus .....	J. C. Hagan .....	4, 167
Water-supply regulator for water-works .....	B. Holly .....	4, 085
Water-supply regulator for water-works .....	B. Holly .....	4, 086
Water-supply regulator for water-works .....	B. Holly .....	4, 087
Weather-strip .....	F. C. Gridley .....	3, 848
Weight for sashes, clocks, &c. ....	D. B., I. A., and T. T. Lacy, and The Lacy Sash-Weight Company, and The Standard Sash-Weight Company .....	4, 115
Wheel, Carriage .....	J. D. Sarven .....	4, 116
Wheel, Railway-car .....	G. Natorp .....	3, 919
Wheel, Railway-car .....	J. K. Sax and G. W. Kear .....	3, 954
Wheel, Water .....	W. Foos, J. W. Bookwalter, M. A. Lefell, and L. Foos .....	3, 855
Whip-socket .....	J. O. Merriam and E. Chamberlin .....	4, 071
White-lead, Manufacture of .....	D. C. Colby, T. Woods, and B. F. Pines .....	4, 074
Wind-mill, Self-regulating .....	Continental Windmill Company, New York .....	4, 169
Window-blind .....	S. Hebron .....	3, 933
Windows, Mode of attaching cornice to .....	A. Peple .....	4, 077
Wood, Machine for bending .....	W. P. Letchworth .....	3, 850
Wood, Machine for bundling .....	W. S. Williams and T. J. O'Connor .....	4, 142
Wood, Preserving and hardening .....	J. L. Samuels .....	4, 158
Wool and other fibrous material, Dye for coloring .....	A. Knight and G. W. Talbot .....	4, 023
Wrench .....	Collins Company .....	3, 852
Wrench .....	L. Coes .....	3, 918
<b>Y.</b>		
Yeast for distillers, Manufacture of .....	J. Wolff .....	3, 959

TRADE-MARKS.

[This list commences with the issue of October 25th.]

<b>A.</b>		
All-healing liniment and morning-star lamp-oil .....	Teter & Hite .....	47
Ax .....	J. W. Meyer .....	43
Ax, Chopping .....	Böttcher, Kellogg & Co .....	83
<b>B.</b>		
Baking-powder .....	Thompson & Steele .....	95
Base-ball .....	Peck & Snyder .....	46
Bitters, Honolulu orange .....	R. Des Auges .....	114
Bitters, Stomach .....	J. A. Jackson & Co .....	39
Broom .....	R. W. English .....	86
Broom and brush .....	L. Y. Gardiner .....	100
Broom XX .....	R. W. English .....	83
Broom XXX .....	R. W. English .....	87

*Alphabetical list of trade-marks—Continued.*

Invention or discovery.	Name of patentee.	No.
Burning-fluid .....	G. M. Dunforth .....	113
Burning-fluid .....	P. Weisenberger .....	121
Burning-fluid, Non-explosive .....	R. F. Danforth .....	67
C.		
Car-wheel .....	W. G. Hamilton .....	8
Cigar .....	D. Hirsch & Co. ....	22
Cigar .....	D. Hirsch & Co. ....	23
Cigar .....	D. Hirsch & Co. ....	24
Cigar .....	D. Hirsch & Co. ....	25
Cigar .....	D. Hirsch & Co. ....	26
Cigar .....	D. Hirsch & Co. ....	27
Cigar .....	D. Hirsch & Co. ....	28
Cigar .....	D. Hirsch & Co. ....	29
Cigar .....	D. Hirsch & Co. ....	30
Cigar .....	D. Hirsch & Co. ....	31
Cigar .....	D. Hirsch & Co. ....	32
Cigar .....	D. Hirsch & Co. ....	33
Cigar .....	D. Hirsch & Co. ....	34
Cigar .....	D. Hirsch & Co. ....	35
Cigar .....	W. S. Roose .....	80
Cigar .....	W. S. Roose .....	81
Cigar .....	Rawson & Philbuck .....	92
Cigars, snuff, and tobacco .....	Lorin Palmer .....	103
Cigars, tobacco, and snuff .....	J. C. Partidge & Co. ....	65
Compound, Medical .....	J. A. McKimmon .....	42
Compound, Medical .....	United States Proprietary Medicine Company, Cincinnati.	74
Compound, Medical .....	G. C. Furber .....	99
Compound, Medical .....	S. S. Seeley .....	120
Cosmoline, a product of petroleum .....	E. F. Houghton .....	56
Cotton-seed .....	H. J. Holmes .....	37
Cough-balsam .....	W. Maddox .....	62
Cutlery .....	R. J. Roberts .....	128
D.		
Devised entremet .....	W. Underwood & Co. ....	82
Dress-goods, Black alpaca .....	Bowen, Hunt & Winslow .....	66
Dry goods .....	Dale, Ross & Co. ....	12
E.		
Fertilizer .....	Walton, Whan & Co. ....	75
Fertilizer .....	Dugdale & Girvin .....	115
Fertilizer .....	Dugdale & Girvin .....	116
Fertilizing compound .....	J. J. Turner & Co. ....	16
Fish .....	T. Coit .....	4
Furnishing goods .....	Fish, Clark & Flagg .....	118
G.		
Goods, Water-proof .....	C. Tappan and M. F. Winn .....	111
Guano, Soluble sea-island .....	R. W. L. Rasin .....	45
H.		
Hair, Preparation of .....	R. Green .....	21
Ham .....	W. Ryan .....	11
Huntoon steam-governor .....	J. A. Lyuch & Co. ....	68
L.		
Lead-pencil .....	E. Faber .....	19
Leather .....	G. F. and C. T. Page .....	125
Leather-dressing .....	C. L. Hawthaway .....	78
Liniment .....	Ridenour, Coblentz & Co. ....	93
Linseed oil, Refined boiled .....	Atlantic White-Lead Company, New York.	72
Liquid paint .....	Averill Chemical Paint Company, New York.	1
Liquors .....	C. H. Ross .....	119
M.		
Medicine .....	J. H. Zelin & Co. ....	52
Medicine .....	W. N. Wells .....	76
Metal .....	Patent-Metal Company, Philadelphia.	73
Mustard .....	J. B. Baldy & Co. ....	2

*Alphabetical list of trade-marks—Continued.*

Invention or discovery.	Name of patentee.	No.
<b>O.</b>		
Oil.....	C. Pratt.....	107
Oil, Lubricating.....	West Virginia Oil and Oil-Land Company.....	48
Oyster-packing.....	W. L. Ellis & Co.....	5
<b>P.</b>		
Pencils, Lead.....	E. Faber.....	117
Planter, Corn.....	D. W. Hughes.....	38
Planter, Corn.....	Pope & Baldwin.....	91
Polishing-preparation.....	Buffalo Magic Polishing Company.....	13
Powder, Detergent.....	J. S. Smith.....	70
Preparation for the hair.....	J. L. Martin.....	58
Prize-candy.....	E. Meyers & Co.....	44
<b>R.</b>		
Razor-strap.....	B. F. Badger.....	96
Retail coal.....	E. Branson.....	3
Root and herb bitters.....	Flint & Co.....	98
<b>S.</b>		
Scale.....	Victor Scale Company.....	49
School-chart.....	F. G. Jolson.....	40
Sewing-machine.....	Weed Sewing-Machine Company.....	51
Silver and plated ware.....	Lippiatt Silver-Plate and Engraving Company, New York.....	41
Snuff.....	W. E. Garrett & Sons.....	7
Snuff.....	Appleby & Helme.....	61
Soap.....	J. K. Hogg.....	9
Soap.....	A. Warfield.....	59
Stove-blackening.....	H. A. Bartlett.....	18
Stove-polish.....	J. L. Prescott.....	109
Super-phosphate.....	Watson & Clark.....	60
<b>T.</b>		
Table-sauce.....	W. King.....	57
Tobacco.....	R. R. Randolph.....	110
Tobacco, Manufactured.....	A. W. Foote.....	20
Toilet-soap.....	Deniker & Melville.....	85
Tube, metal, Seamless.....	American Tube Works, Boston.....	17
<b>U.</b>		
Umbrella and parasol.....	Dawes, Fiske & Fanning.....	84
Umbrella and parasol.....	J. T. Smith.....	94
<b>W.</b>		
Wagon-axle.....	D. A. Brown & Co.....	97
Watch.....	H. Hirsh and S. Oppenheimer.....	36
Webbing, Suspender and elastic.....	J. W. Wattles.....	50
Whisky.....	H. K. Thurber & Co.....	15
Whisky.....	C. P. Moorman.....	63
Whisky.....	C. P. Moorman and M. J. Hardy.....	64
Whisky.....	White & Alexander.....	77
Whisky.....	Hoffheimer Brothers.....	79
Whisky.....	Frieberg & Workum.....	89
Whisky.....	C. P. Moorman & Co.....	90
Whisky.....	W. A. Gaines.....	101
Whisky.....	W. A. Gaines.....	102
Whisky.....	W. A. Gaines.....	103
Whisky.....	W. A. Gaines.....	104
Whisky.....	H. Block & Co.....	112
White-lead.....	Brooklyn White-Lead Company.....	53
White-lead.....	Brooklyn White-Lead Company.....	54
White-lead.....	Brooklyn White-Lead Company.....	55
White-lead.....	Atlantic White-Lead Company, New York.....	71
Wool-hose.....	A. P. Olzendam.....	10
Wrought-iron pipe.....	Evans, Clow, Dalzell & Co.....	6
<b>Y.</b>		
Yeast-powder.....	H. K. Thurber & Co.....	14
Yerba Santa.....	A. McDermot, Oroville & Redington, and Hostetter & Co.....	69

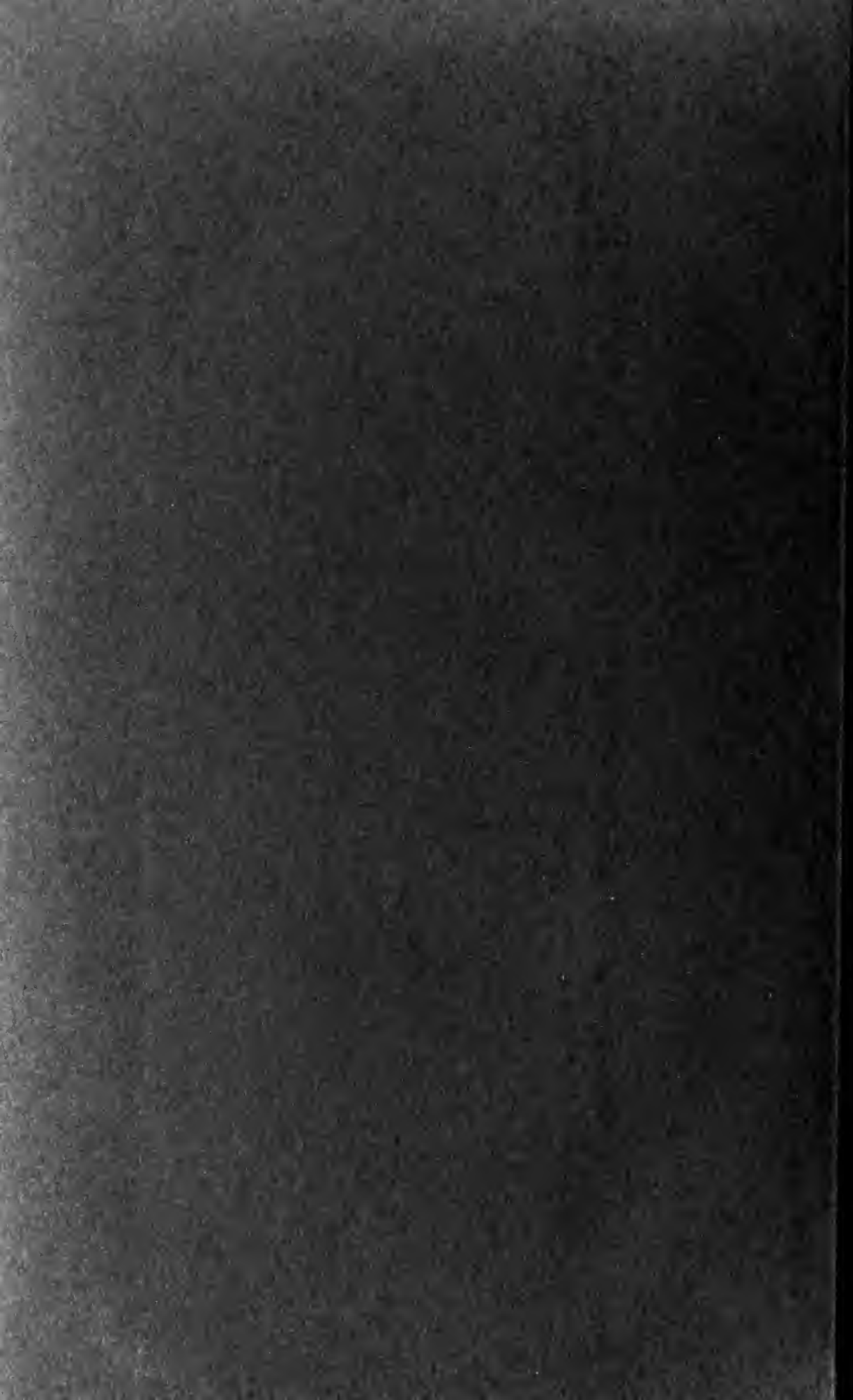
















SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01585 2536